STRATEGIES FOR INVOLVING UNIVERSITIES AND RESEARCH INSTITUTES IN HEALTH SYSTEMS RESEARCH

Ann Brownlee
Lilia Duran Gonzales
Indra Pathmanathan

Health Systems Research Training Series

Volume 3

IDRC
CANADA

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HSR Training Series

Volume 3: Strategies for Involving Universities and Research Institutes in Health Systems Research

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Strategies for Involving Universities and Research Institutes in Health Systems Research

Health Systems Research Training Series
Volume 3

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Abstract

This is the third volume of the five-volume Health Systems Research (HSR) Training Series which has been compiled by a Technical Working Group, supported by IDRC and WHO. Each volume is directed toward a particular target group and each addresses specific aspects of the HSR process. Volume 3 is designed to assist university-trained researchers located in universities or research institutes who wish to promote and participate in multidisciplinary programs of HSR. This volume will be of particular interest to those who wish to integrate the concepts of HSR into existing health and social science degree programs and to promote the development of student theses in the area.

The other volumes in the series are: volume 1, which focuses on the need to promote the use of HSR as management tool and reviews strategies for promoting HSR among policymakers and senior managers; volume 2, a course outline in modular format, which deals step-by-step with the development of an HSR proposal and field testing (Part I) and with data analysis, report writing, and implementation (Part II); volume 4, a course outline in modular format designed to provide research managers with skills for managing a program of HSR; volume 5, a course outline in modular format designed to assist those whose primary responsibility is organizing and conducting training courses for the relevant target groups.

The series is designed to support a program of essential national health research. Users are encouraged to examine the materials critically and to choose and adapt them to their particular needs.

Résumé

Ce volume est le troisième d'une collection de cinq volumes de formation à la recherche sur les systèmes de santé (RSS) qui ont été rassemblés par un groupe de travail technique financé par le Centre de recherches pour le développement international et l'Organisation mondiale de la santé. Chaque volume est destiné à un groupe particulier et chacun porte sur certains aspects de la recherche sur les systèmes de santé. Le volume 3 vise à aider les chercheurs de formation universitaire qui travaillent dans des universités ou des instituts de recherche et qui veulent promouvoir des programmes multidisciplinaires de RSS et y participer. Il intéressera particulièrement les personnes voulant intégrer les principes de la RSS aux programmes d'études universitaires en sante et en sciences sociales et promouvoir la rédaction de thèses par les étudiants dans ce domaine.

Les autres volumes de la collection sont les suivants : le volume 1 traite de la nécessité de promouvoir la RSS comme outil de gestion. Y sont décrites les stratégies propres à cette promotion auprès des décideurs et des cadres supérieurs. Le volume 2, sous forme modulaire, est le volume central qui expose, étape par étape, la manière de formuler une proposition de RSS et de la mettre à l'essai (partie I), et aussi d'analyser les données et de rédiger un rapport (partie II). Le volume 4 est un guide de gestion d'un programme de RSS. Le volume 5 aidera les personnes chargées d'organiser et de donner des cours de formation aux divers groupes cibles.

Ces cinq volumes ont pour but d'appuyer un programme national de recherche essentielle en santé. Les personnes qui s'en serviront sont incitées à les examiner d'un oeil critique et à en tirer ce qui répond à leurs besoins ou y répondrait après adaptation.

Resumen

Este es el tercero de cinco volúmenes de una serie de capacitación sobre Investigación de Sistemas de Salud (ISS), compilada por un Grupo de Trabajo Técnico que recibió el apoyo del Centro Internacional de Investigaciones para el Desarrollo y la Organización Mundial de la Salud. Cada volumen está dirigido hacia un grupo particular y trata de aspectos específicos del proceso de ISS.

El Volumen 3 está concebido para ayudar a los investigadores con educación universitaria trabajando en universidades o institutos investigativos y que deseen promover y participar en programas multidisciplinarios de ISS. Este volumen será de particular interés para aquellos que desean integrar los conceptos de ISS en programas actuales de carreras universitarias en los campos de las ciencias sociales y la salud, y para promover el desarrollo de tesis de estudiantes en este campo.

Los otros volúmenes en la serie son: volumen 1, que centra su atención en la necesidad de promover los usos de ISS como instrumento de gestión. Asimismo, describe las estrategias para promover la ISS entre ejecutivos y gerentes principales; volumen 2, en formato modular, elemento fundamental que trata progresivamente del desarrollo de una propuesta de ISS y la prueba sobre el terreno (Parte I). Asimismo, se trata en este volumen el análisis de datos y la redacción de informes (Parte II); volumen 4, guía para la gestión de un programa de ISS; volumen 5 servirá de ayuda a aquellos cuya responsabilidad primaria sea organizar y dictar cursos de capacitación para los grupos meta pertinentes.

La serie está diseñada para apoyar un programa esencial de investigación sobre salud a nivel nacional. Se exhorta a los usuarios a examinar críticamente los materiales y adaptarlos a sus necesidades particulares.

ACKNOWLEDGMENTS

The importance of involving universities and research institutes in "decision-linked" HSR, in which reserchers work together with health managers, practitioners, and the community to find solutions to priority problems, has become increasingly recognized in recent years. As far as we are aware, this volume is the first effort to bring together much of the experience in this area. We are indebted to a number of individuals who took the time to provide us with valuable insights on their own programs and experiences. Special thanks to M. Jegathesan of the Institute for Medical Research, Kuala Lumpur; Victor Neufeld of McMasters University; Patrick Twumasi of the Faculty of Social Sciences, University of Ghana; Gordon De Friese and Jane Stein of the Cecil G. Sheps Center for Health Services Research of the University of North Carolina at Chapel Hill; Noel Lawas of the University of the Philippines; David Hunter of the Nuffield Institute for Health Services Studies, University of Leeds; and Myrna Seldman and Marjorie Horn of the MORE Project, Washington DC. In addition, we'd like to express our gratitude to Yvo Nuyens of WHO and Annette Stark of IDRC who, in addition to providing superb leadership and support for the entire HSR series, contributed excellent material for this volume based on their own university experience and work with a wide range of programs around the world.

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FOREWORD

The ultimate goal of any national health-development process is to enable its people to reach a level of health that at least enables them to participate actively in the social and economic life of the community in which they live. To attain this objective, existing health systems must be redirected to achieve equitable reallocation of resources for health — total coverage, increased accessibility to primary health-care services, and effective referral to secondary and tertiary levels of care. It is also relevant to develop appropriate mechanisms to promote effective community participation in the promotion and maintenance of health.

Such redirection of health systems may require changes in health-care planning and government policy; in the organization and administration of health and related services; in the financing and budgeting of systems and procedures; and in the selection and application of appropriate technology.

To effect the necessary changes, countries must decide on the best approaches to adopt. This requires detailed and accurate information on needs, possibilities, and consequences of recommended actions. Such information is often lacking, inadequate, or unreliable. As a result, decisions are based on assumptions and unjustified conclusions and often result in inappropriate policy choices, the consequences of which are only discovered after implementation.

Research is a systematic search for information and new knowledge. It serves two essential and powerful purposes in accelerating advances in health. First, basic or traditional research is necessary to generate new knowledge and technologies to deal with major unresolved health problems. Second, applied research is necessary to the process of identifying priority problems and to designing and evaluating policies and programs that will be of the greatest health benefit, using existing knowledge and available resources, both financial and human.

These two purposes together, in what has now been defined as essential national health research, must catalyze the generation of new knowledge and the application of existing knowledge, an essential link to equity in development.

During the past decade, concepts and research approaches to support health development have evolved rapidly. Many of these have been described by specific terms such as operations research, health services research, health manpower research, policy and economic analysis, applied research, and decision-linked research. Each of these has made crucial contributions to the development of Health Systems Research (HSR) but their limited and highly focused approaches to problem solving have resulted in their being integrated within the scope of HSR while at the same time describing their unique contribution to health in development.

HSR is ultimately concerned with improving the health of a community, however defined, by enhancing the efficiency and effectiveness of the health system as an integral part of the overall process of socioeconomic development.

The aim of HSR is to provide health managers at all levels with the relevant information that they need to solve the problems they are facing. The participatory nature of such research is one of its major characteristics. It is argued that the involvement of all parties — the community, health-care managers and decision-makers, and researchers — in the definition of the problem helps to focus the investigation and to enrich the quality of the data collected. Similarly, participating in all stages of the research is essential if feasible and acceptable solutions to problems are to be implemented and sustained at community, district, regional, or national level.

Because HSR addresses health problems in the broad context of social, economic, and community development, research inputs from many different disciplines are required. These include demography, epidemiology, health economics, policy and management sciences, social and behavioral sciences, statistics, and some aspects of the clinical sciences. Each of these disciplines has developed specialized research approaches in its efforts to provide information that will support health development, but it is increasingly evident that the problems that are addressed by HSR require a combined input from many disciplines and especially that researchers from these specialized fields need to acquire the skills to work together in multidisciplinary teams.

The main characteristics of HSR are

- Its focus on priority problems in health;
- Its participatory nature;
- Its action orientation;
- Its integrated, multidisciplinary approach;
- Its multisectorial nature;
- Its emphasis on cost-effectiveness;
- Its focus on practical, timely solutions; and
- Its iterative nature that allows for evaluation of the impact of planned change and consequent revision of action plans and health policy.

Although its methodologies can be applied to similar problems in different countries, the findings and solutions to these problems are unlikely to be the same because of differences in cultural, social, economic, and political realities. This is one of the strong arguments in support of a national core of persons trained in HSR whose orientation and plan of work is guided by the country's agenda of essential national health research.

With progressive development, the uses of HSR are becoming more widely appreciated. As a result, it is being integrated into and applied in special areas of management such as quality assurance, technology assessment, and resource management.

Because the capacity for HSR is small, especially in developing countries, it is not surprising that, over the last few years, a series of training programs has been organized or funded by many agencies, including the International Development Research Centre (IDRC), the Pan American Health Organization (PAHO), the World Health Organization (WHO), and the US Agency for International Development (USAID).

As well, several international health programs have given high priority to capacity building for HSR.

- The UNICEF *Special Program on National Capacity Building for Child Survival and Development* aims "to strengthen awareness, knowledge, and skills for operations research using the health systems approach to promoting inquisitiveness and self-reliant approaches to identify pressing problems at the community level and find practical solutions for them."
- The overall goal of the *Network of Community Oriented Educational Institutions for Health Sciences* is "to improve the relevance of health professions education by enhancing the ability

of graduates to help identify and solve the problems of communities in which they serve ... using as framework a new system of partnerships among universities, governments and communities, the focus of which is a program of essential national health research."

- The *International Health Policy Program* is planning to develop health-policy research and training centres, whose role will be to facilitate and coordinate the "synthesis of policy-relevant research, dissemination of such research, capacity building in health policy analysis, and technical assistance for policy analysis and research."

- The *International Clinical Epidemiology Network* (INCLEN) supports the development of clinical epidemiology units (CEUs) in medical schools in developing countries. The role of CEUs is to provide leadership in the application of quantitative measurement principles (drawn from clinical epidemiology, biostatistics, health economics, and health social science) in the research, education, and service responsibilities of the medical school.

- The Danish International Development Agency (DANIDA) has been supporting a series of inter-regional training workshops for research managers in HSR and, since 1987, the *Joint Project of the World Health Organization* and *The Netherlands Ministry for Development Cooperation - The Royal Tropical Institute* is involved in a process for capacity building for HSR in 14 countries of southern Africa.

All these and many more initiatives in capacity building for applied research received, in 1990, a strong political, moral, and intellectual backing in the recommendations of the Commission on Health Research for Development. In its *Agenda for Action*, the Commission recommends

> That building and sustaining research capacity be integrated as a key objective and powerful instrument for all health and development investments. Primary commitment must come from developing-country governments to accord priority and provide sustained financial support. Strong international re-enforcement is also needed. International exchange and interaction can do a great deal to help strengthen the capacity of developing-country researchers and institutions.

Within the broader context of the Commission's recommendations, three major challenges for the future development of HSR can be identified:

- How to enhance the demand for HSR;

- How to strengthen national capacities in HSR; and

- How to institutionalize the efforts into a sustainable process.

It is with these challenges in mind that this *Health Systems Research Training Series* was developed.

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GENERAL INTRODUCTION

A recent review of Health Systems Research (HSR) workshops sponsored by IDRC concluded that, although IDRC's objectives had been met, training materials should be revised and expanded to meet the needs of specific groups and to guide the development of follow-up sessions. In a related action, the WHO Global Advisory Group on HSR concluded that building and sustaining national capacities for HSR was a major issue to be addressed in program activities. It was specifically recommended that these activities must include components to "evaluate and revise training materials periodically and to support training programs at different levels of the health systems."

As a result of these recommendations, representatives of IDRC, PAHO, and WHO met in Ottawa in October 1988 to review past and current initiatives and to propose future activities. The group recognized that, if training in HSR is to have an impact on improving health and health care, it is necessary to clarify the context and stages of development of an effective HSR process within a given country. It was further decided that specific target groups for orientation and training in HSR should be selected and appropriate training strategies developed to strengthen the research capacity of countries, based on their specific needs and capabilities in HSR.

To achieve this goal, a technical working group was established and given the mandate to define and coordinate the development of a basic set of training materials for each of five identified target groups. The framework consisted of:

- A definition of the target group;
- A description of the entry competence or entry characteristics of the target group;
- The expected outcome behaviour, including skills and attitudes;
- The appropriate training strategies and training context; and
- The available training materials.

The deliberations and effort of the Technical Working Group have resulted in these five volumes of materials. Users are encouraged to become familiar, generally, with the entire set and then to selectively implement a program of training, research, planning, and health-care policy based on their country's needs.

Volume 1: Promoting Health Systems Research as a Management Tool

For Decision-makers

This document focuses on the need to promote the use of HSR as a management tool among decision-makers. Based on an analysis of experience in developing countries in the last decade, it presents an overview of how HSR can lead to better decisions and how the development of an effective research program can be fostered at country level. In addition, it provides descriptions of specific strategies for promoting HSR among policymakers and senior managers that have been used successfully in a number of settings.

Volume 2: Designing and Conducting Health Systems Research Projects

Part I - Proposal Development and Fieldwork
Part II - Data Analysis and Report Writing
Course participants, who may include concerned citizens, health workers, researchers, and health decision-makers from the provincial or even national level, will select priority health problems particular to their own situations that cannot be solved unless more information is collected. Preferably, the topics will have been selected before the training starts (see Volume 1), but they may need more specification. In most cases, a team of course participants will then carry out the planned research alongside their regular duties (Part I). A second workshop is then scheduled to provide information on data analysis, report writing, and utilization of results (Part II).

This volume is the pivotal one that deals specifically with the development of research proposals of a participatory nature (community/health-care manager/researcher) and, subsequently, with the implementation of the field study and the analysis and dissemination of study results. In this context, it is also of interest to junior researchers and those persons in universities and other training facilities who wish to operationalize HSR.

Volume 3: Strategies for Involving Universities and Research Institutes in Health Systems Research

For Senior Researchers and Academic Staff
This volume is designed to assist university-trained researchers located in universities or research institutes who wish to promote and participate in multidisciplinary programs of HSR. This volume will be of particular interest to those who wish to integrate the concepts of HSR into existing health and social science degree programs and to promote the development of student theses in the area.

Volume 4: Managing Health Systems Research

For Research Managers
The research managers for whom this volume is intended include managers of research institutes, academic departments, and agencies that have a function in processing research applications and in funding and coordinating research projects. The training should enable managers to facilitate their institutions' or organizations' contribution to and support of the development of HSR in the country as well as the utilization of research in improving the health of the people.

Volume 5: Training of Trainers for Health Systems Research

For Trainers and Facilitators
Experienced researchers are not necessarily experienced teachers. Moreover, few of them have experience in the organization and training of participants for whom research is a secondary responsibility and who have limited time to read or engage in research activities.

For training in HSR to be effective, experienced researchers need to acquire competence in the training approaches that have been successfully developed and used during the past few decades for training health personnel in a variety of important topics related to health.

Trainers and facilitators include those whose primary responsibility is organizing and conducting training courses for the different target groups and those who assist trainers in conducting courses.

INTRODUCTION TO THIS VOLUME

Why this document was developed

This document was developed as part of a Health Systems Training Series by a Technical Working Group sponsored by the International Development Research Centre (IDRC) and the World Health Organization (WHO). The Working Group, responding to the need for material to assist in training sufficient personnel to promote, conduct, and utilize health systems research (HSR), identified five target groups for which training materials were needed:

1. Decision-makers (both policymakers and senior managers);
2. Health workers and mid-level managers;
3. **Researchers in universities and research institutes**;
4. Research managers; and
5. Trainers and facilitators.

This document focuses on the need to involve universities and research institutes in "decision-linked" HSR which will provide health managers and other practitioners, as well as communities, with the information they need to solve priority problems. Based on an analysis of recent experience in both western and developing countries, it explores strategies that can be used to promote the involvement of researchers, teachers, and students in research, planned and implemented in collaboration with health-service providers and the community. The goal is to enhance the relevance, efficiency, and effectiveness of the health system. After providing an overview on HSR and the role of the university, it explores strategies for gathering institutional support for HSR, for strengthening research capabilities, and for institutionalizing HSR in the university setting. The "university," in the discussions that follow, has been broadly defined to include other training and research institutes.

Whom this document is for

This document can be used by several types of audiences:

1. Heads of university departments and research institutes who wish to strengthen the involvement of their institutions in HSR.

2. Senior researchers and teaching staff who want to learn more about HSR and to strengthen both teaching and research in this field.

3. Health policymakers and senior managers who wish to promote the use of HSR as a management tool within their organizations and who want to involve universities and research institutes in the effort.

4. Health research advisors or consultants who are working to assist universities and research institutes in the development of effective HSR programs.

How this document can be used

Users of this document can either read it in its entirety or focus on specific sections, depending on their needs and interests. The chart below will help identify where specific types of information can be found:

Questions	Where to find the answer
What is the role of the university in HSR?	Chapter 1: page 1
What is the purpose and focus of HSR?	Chapter 1: page 3
Who should be involved in HSR?	Chapter 1: page 8
What are the constraints that inhibit the university's involvement in HSR?	Chapter 2: page 9
What developments have created a more favorable climate for HSR?	Chapter 2: page 10
What strategies can be used to gather institutional support for HSR?	Chapter 3: page 15
Assessment of needs and resources	page 15
Strengthening awareness, using informal strategies	page 19
Increasing consensus, using formal strategies	page 24
What strategies can be used to strengthen the skills of staff and students in HSR?	Chapter 4: page 29
Strengthening research skills	page 30
Strengthening skills for working with health managers and the community	page 41
Strengthening teaching skills	page 46
Strengthening skills for managing research	page 49
What strategies can be used to institutionalize HSR in the university?	Chapter 5: page 57
Strategies for sustaining training in HSR	page 57
Strategies for sustaining research activities	page 61
Strategies for sustaining the university partnership with health-care organizations and the community	page 69

CHAPTER 1

STRENGTHENING THE SOCIAL RELEVANCE OF UNIVERSITIES: OPPORTUNITIES THROUGH HEALTH SYSTEMS RESEARCH

The Role of Universities and Research Institutes

The collective adoption of the goal Health For All by the Year 2000 (WHO 1978) stimulated all countries to search for practical and affordable ways, within their respective communities, to achieve it. Countries are now even more anxious to find effective ways to honour this commitment as time is quickly running out. Effort has been focused and research aims consolidated in some countries by their involvement in the recently completed Commission on Health Research for Development and the activities of the resulting task force (Commission on Health Research for Development 1990).

One of the most precious resources that remains underutilized is the sanctuary of wisdom, knowledge, and ingenuity that exists in universities and research institutes. Universities and research institutes have enjoyed credibility as depositories of knowledge and as leaders in the search for truth and advancement. However, in the past two decades, the aura of infallibility and supremacy has begun to fade. Many people have started to question the impact of these institutions on socioeconomic development, taxpayers and policymakers are expecting better returns for the funds invested in higher education and research, and students have expressed concern about the relevance of their training (WHO 1986).

In 1984, the World Health Assembly adopted a resolution on the role of universities that included the following recommendations (World Health Assembly 1984):

- To ensure that students in all faculties are made aware of the concepts and goals of "Health for All [HFA] by the Year 2000" and actively support the measures for attaining it;
- To provide the kind of education and training for students in health and related disciplines that will prepare them technically and attune them socially to meet the health needs of the people they serve;
- To conduct various types of research (biochemical, epidemiological, social, economic, behavioural) necessary for the vigilant pursuance of HFA strategies;
- To take active steps to increase their collaboration with relevant ministries in governments and other bodies for the articulation and formulation of policies, implementation and evaluation of strategies of HFA;
- To place themselves at the disposal of communities to the maximum of their capacity for the promotion of health and provision of health care;
- To participate in creating awareness, in the general public, of the action people can take to promote their health and the health of the communities in which they live.

These recommendations clearly recognize the three major functions of universities, i.e., teaching, research, and service, and place these functions within the context of Health For All. Most research institutes in health and health-related fields have functions that are similar to those of universities in respect to research; some research institutes also have teaching or service functions. Therefore, the recommendations of the World Health Assembly may be equally applied to such institutions.

How can universities fulfill their obligations to society while continuing to perform their traditional functions of teaching, research, and service?

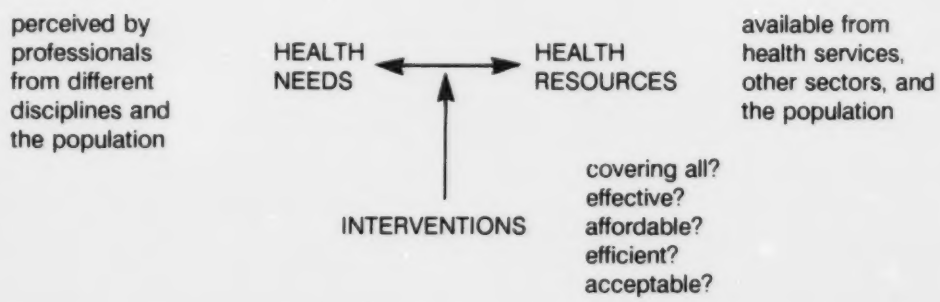
Health for All[1]

The adoption of the philosophy and strategies of Health For All by the year 2000 implies that we are committed to ensuring that *all* people will attain a level of health that enables them to participate actively in the social and economic life of the communities in which they live.

In the past, researchers have made major contributions to health by discovering the causes of diseases and ill health and by developing the technology to cure and prevent disease and promote health. However, despite the high level of knowledge and technology that is available today, many peoples continue to be unable to achieve the target of Health For All. Why is this so?

The health of any community depends on the interaction and balance between the health needs of the community, the health resources that are available, and the selection and application of health and health-related interventions. This is illustrated in Fig. 1.1.

Figure 1.1. Evaluating health interventions.



To effect the changes necessary to achieve Health for All, countries must decide on the best approaches to adopt. This requires detailed and accurate information on needs, possibilities, and consequences of recommended actions. Such information is often lacking, inadequate, or unreliable. For this reason, decision-making based on assumptions and unjustified conclusions often results in the selection of inappropriate policies and programs, the consequences of which are only discovered after implementation. It is evident that it is important to apply the technology that exists in an optimal manner, within the limits of

[1] An expanded version of the material in this section also appears in Volume 2 of this training series, *Designing and conducting health systems research projects*, Module 2: Introduction to health systems research.

the available resources, to serve the health needs of the community. In many instances, research can provide the information needed for informed decision-making.

The Purpose and Focus of Health Systems Research

> RESEARCH is the systematic collection and interpretation of data to answer a certain question or solve a problem.

The Commission on Health Research for Development (1990) states that research accelerates advances in health in two major ways: first, through the generation of new knowledge and technologies to deal with major unresolved health problems and, second, by identifying priority problems and designing and evaluating policies and programs that will deliver the greatest health benefit, making optimal use of available resources. The focus of the first type of research may be viewed as expanding the boundaries of human knowledge while the focus of the second is ensuring that mankind derives optimum benefit from the available store of knowledge. In general, universities and research institutes have tended to focus on the first type of research. The World Health Organization (1990a) and, more recently, the Commission have argued powerfully for the reorientation of research so as to strengthen the second category, thereby contributing to the goals of Health For All.

What is Health Systems Research?

> Research that supports health development has come to be known as HEALTH SYSTEMS RESEARCH. It is ultimately concerned with improving the health of a community by enhancing the efficiency and effectiveness of the health system as an integral part of the overall process of socioeconomic development.

Health systems research (HSR) is a scientific method for acquiring information that can be used for rational decision-making in health management. It is concerned with populations, organizational structures and the interaction between them. It provides information to identify health needs in specific contexts and to set priorities on an informed basis. This type of information can assist decision-makers in facilitating the allocation of resources and in fostering a more equitable population-based approach that responds to the health needs of high-risk and vulnerable groups. HSR places health and disease in a larger context that takes account of social, economic, and cultural factors. It also provides information that can assist in applying available technology in evaluating policies and programs more effectively and in suggesting priorities for new research directions (WHO 1983).

Examples of the types of information HSR studies have provided, abstracted from the WHO (1988) publication, *Health Systems Research in Action*, are below.

HSR in action

Information for health planning

In **Egypt** the Urban Health Sector Study provided information on the health services, the resources, and the technologies available in each health facility, the communities that were served, and the links between the services and the communities. This information was used for improving community participation as well as for setting up mechanisms to improve the effectiveness and efficiency of service delivery (Hassouna 1988).

Information for improving accessibility

In **Botswana** a study of a new agricultural development program with its consequent large-scale migration provided information for determining appropriate stopping places for mobile dispensaries and led to the development of a system for continued monitoring of health problems, particularly of migrants from other parts of the country who were at special risk in an unfamiliar environment (Owour-Omondi 1988).

In **Indonesia** a research project identified risk factors among pregnant women and developed a screening system that is used in 11 provinces to detect high-risk mothers and manage them at appropriate levels in the health system (Loedin 1988).

In the **USA**, a number of studies influenced the debate and decisions on adaptation of the existing health system by consolidating the health insurance system, financing medical care for the poor, developing "health maintenance organizations," and adopting medicare, all of which were intended to provide more equitable access to health care (Roemer 1988).

Information for better manpower development

In **Malaysia**, a study that investigated factors contributing to underutilization of district hospitals resulted in the development of management training programs for hospital managers, better recognition of the managerial role of clinical heads of departments, and the upgrading of clinical skills of doctors in smaller peripheral hospitals (Pathmanathan and Khalid 1988).

An analysis of these examples demonstrates that HSR has been relevant and useful in developing countries as well as in the industrialized world. Also, whereas the specific findings of a study may be relevant only to the particular environment in which the study was conducted, the approaches and methods used have a wider application and contribute to expanding the boundaries of human knowledge.

Universities and HSR

HSR provides a channel through which universities can strengthen their relevance in society while contributing to the advancement of human knowledge.

The Scope of HSR

The foregoing review makes it evident that HSR is able to provide information on a wide range of issues within the health system. To obtain an overview and to recognize how this wide range of issues affects the nature of HSR, it is useful to consider a framework illustrating the components of the health system and the types of issues that arise in each of them. One way in which the different interrelated and interacting components of the health system may be depicted is illustrated in Fig. 1.2.

It is evident that decision-making for each of the components relates to a different set of concerns, each of which can have an impact on the attainment of health. Information for all such decision-making is within the scope of what HSR can provide.

HSR is Multidisciplinary[2]

Figure 1.2 illustrates not only the components of the health system and some major areas of concern within each of them, but also the variety of disciplines that are needed to contribute research-based information within these areas.

It is evident that HSR is multidisciplinary. In large and complex studies this may mean that researchers from different disciplines will need to collaborate, each contributing the relevant concepts and research techniques from their own disciplines in designing and executing the studies. In simpler studies, it may mean that researchers can be trained to apply the basic concepts and techniques from several disciplines (e.g., epidemiology and behavioural sciences) in their research projects.

The implication, therefore, is that HSR studies can select and use techniques and approaches from several disciplines, recognizing the potential and limitations of the various approaches and using each in the most relevant context.

Most universities (and many research institutes) have departments, faculties, or units that house several of the disciplines that are relevant for HSR. Such institutions have a good potential for HSR.

Varying Levels of Expertise Needed in HSR[3]

Because the purpose of HSR is to provide information for decision-making, a better understanding of its nature and scope can be acquired by examining the types of decision-making that take place within the health system.

There are decision-makers at every level of the health system. They include "planners, politicians, directors of health programs and... traditional midwives, herbalists, as well as nurse midwives and district health officers." Furthermore they also include the users of health services, that is individuals, families and households, and the community (Venney 1981).

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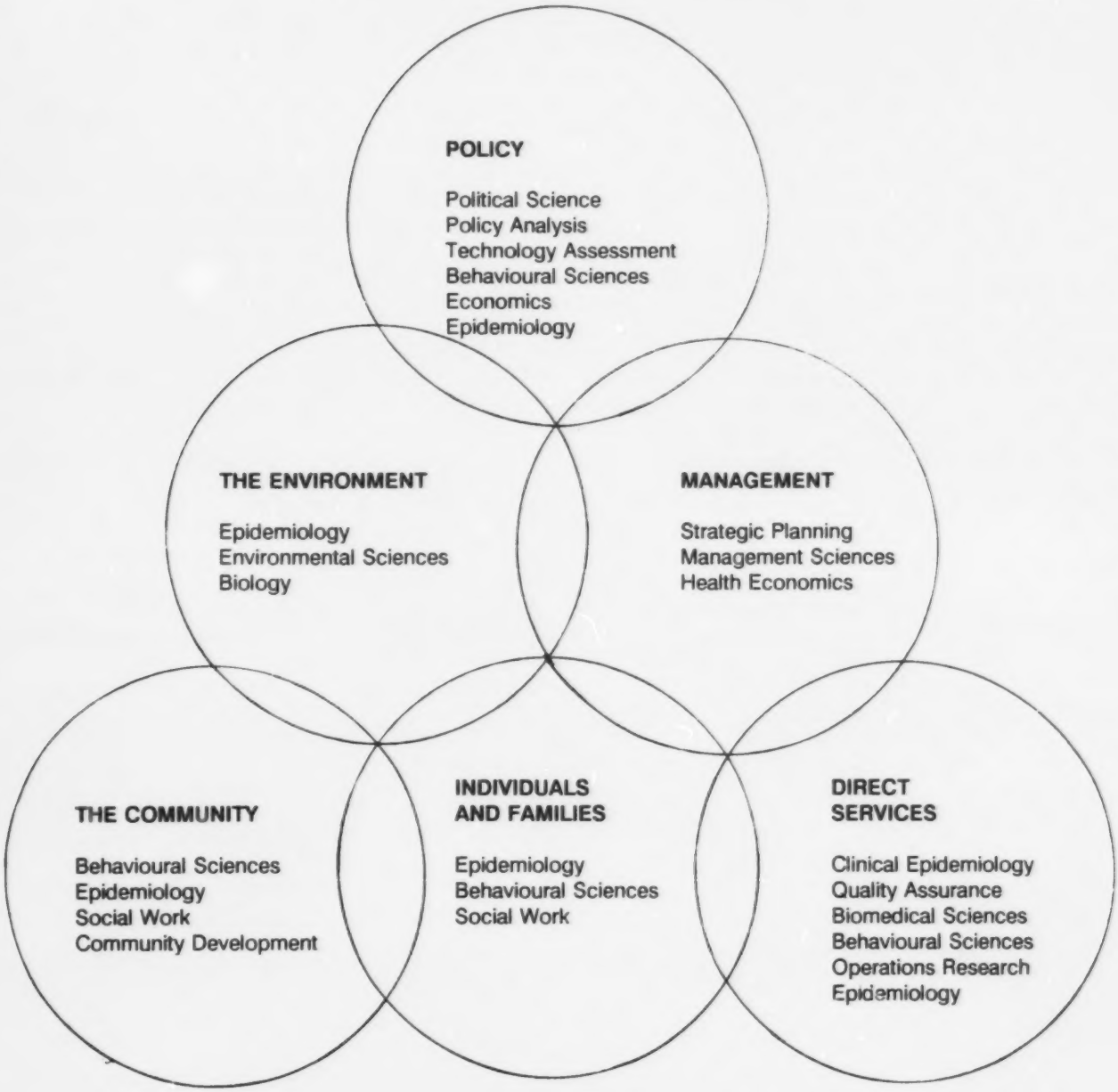
[2] Adapted from Pathmanathan (1991).

[3] Adapted from Pathmanathan (1991).

Figure 1.2. Multidisciplinary skills needed in HSR.



Levels of decision-making in the health system: an example in the area of immunization

- **Planners and politicians** must decide whether the country can afford mass free immunization for Hepatitis B.
- **Directors of health programs** must decide on the priority target groups for such immunization and select the appropriate immunization schedule, health education approaches, training, and cold chain support systems for the Hepatitis B immunization program.
- **District health officers**, **nurse midwives**, and **community health workers** must decide on the most appropriate methods of reaching the target population and achieving acceptable immunization coverage rates.
- **Individuals and families** must decide whether to accept the free immunization offered by the health services for the identified target groups (e.g., infants or workers in high-risk occupations) and whether to pay out of their own pockets for immunization for other family members who are not in the target groups covered by the free program.

It is evident that the complexity of the decision-making is related to the level of the health system at which it occurs. At higher levels, decision-making is complex and may require information of several types both from within the health system and from other related systems. On the other hand, decision-making at the more peripheral levels of the health system (i.e., on the part of the district health officer, nurse midwife, community health worker, and the individual and family) is less complex. The issues are more circumscribed and the scope is more limited. Therefore, the information that is needed at this level is also less complex and the research needed to provide such information is easier to design and conduct. Such studies can be designed and conducted by health personnel at district and hospital level.

Table 1 summarizes the relations among the complexity of the decision-making process, the type of research needed, and the level of expertise needed to take the lead role in the research.

Table 1.1. Complexity of decision-making and related research.

Level in the health system	Complexity of decision-making	Complexity of research	Level of researcher needed
Policymaking and program management	+ + +	+ + +	Experienced researchers in multidisciplinary teams
Mid-level management	+ +	+ +	Mid-level health managers and junior researchers
Operational level	+	+	Health workers, junior researchers and graduate students

Who Should Be Involved in HSR?

Because the purpose of HSR is to provide information for decision-making in health development, it is of crucial importance that the research focus on **issues of priority concern**, and that the results of such research should be used in a way that **leads to action**.

Issues of priority concern are more likely to be identified if not only the researcher but also the relevant health managers, health-care providers, and the community are involved in identifying problems. Research findings are more likely to be used if the potential user is involved in the research. Thus **health managers, health workers, or policymakers**, on the one hand, and **the community**, on the other, should be viewed as partners in the research. HSR is **participatory** in nature. For such participation to be useful, meaningful, and realistic, the potential roles of these new partners in research ventures needs clarification and researchers need special skills to initiate and sustain the partnership. This is further elaborated in chapters 4 and 5.

These characteristics of HSR provide the opportunity for universities to fulfill some of the HFA roles that were envisaged by the World Health Assembly and subsequently by the Commission on Health Research for Development. Through HSR, university and research institute staff and students can become better aware of the health problems and issues of the community, focus their research efforts on assisting health-care providers and communities in developing and using appropriate health strategies, increase their collaboration with health managers, and promote health awareness in the community.

University–health service–community partnership

HSR provides the entry point for universities to build partnerships with health services and the community.

CHAPTER 2

HEALTH SYSTEMS RESEARCH: THE CHALLENGE FOR UNIVERSITIES

HSR provides universities and research institutes with the opportunity to contribute to society by applying their store of special expertise to support health development. Why then have universities been slow in responding to this challenge?

The Constraints

Universities and research institutes are faced with a number of constraints:

The vertical structure of universities

The vertical structure of universities into departments and the lack of mechanisms for communication and coordination between departments makes it difficult to establish multidisciplinary research teams (WHO 1987). Furthermore, for effective collaboration, members of research teams need to be familiar with the concepts, approaches, and technical jargon of sister disciplines and to understand the potential and limitations of their approaches and techniques. There is little incentive, stimulus, or opportunity for researchers in various disciplines to acquire such competence (IDRC 1989).

Career development

Career opportunities for faculty within universities are mainly vertical, that is, within particular departments; yet HSR requires multidisciplinary approaches and skills.

Although research is required and career advancement is related to research productivity, university faculty often have little time for research or for developing their own expertise in research. Researchers need additional skills to be effective in HSR, and they need training and guidance, as well as time, to acquire these skills.

Funding for research

The funding mechanisms for research are not geared to support multidisciplinary research. Researchers embarking on multidisciplinary projects face additional problems in managing their funds and some members of the team may be disadvantaged. This is a disincentive for HSR.

In many universities funding for research is limited. In competition for the limited funds that are available, HSR, being a newcomer, has a low priority. Although research is supposed to be a major function of universities, often the actual emphasis is on teaching and the budget allocated is dependant on the number of students taught, rather than on research productivity (ESAURP 1987).

The nature of clinical and biomedical research

The emphasis of clinical and biomedical research is on quantitative data and experimental study designs or clinical trials. Researchers in these fields are uncomfortable with research involving the community and the health system where the real-life situation precludes the use of experimental study designs and the nature of the information required is sometimes qualitative rather than quantitative. Lack of familiarity with

the concepts and approaches that are available to deal with such situations tends to lead many clinical and biomedical researchers to reject health-system problems as "unresearchable" and to regard research conducted in these areas as "not scientific." This creates barriers to multidisciplinary research (Bloom 1989).

The focus of the social sciences on conceptual and theoretical issues

The traditional emphasis of research in the social and behavioural sciences has been on the development of conceptual and theoretical aspects of these disciplines. Social scientists have inadequate exposure to health-related problems and inadequate experience and training in applying their research skills to practical health problems and issues. Furthermore, the role of the social sciences in the health field is ill-defined (WHO 1989).

The focus on publication rather than on utilization of results

Researchers are seldom given credit for the relevance of their research to national health priorities. Rather, research is judged on its potential for publication, particularly in prestigious international journals. Such journals are seldom geared to local country-specific issues and problems. Furthermore, health decision-makers seldom read such journals and are usually unfamiliar with the specialized technical jargon that characterizes many of them. Thus the potential users of research findings may remain unaware or disinterested in them.

Lack of mechanisms for communication with health managers and the community

There are few established mechanisms for staff in universities to interact with health managers or with the community. Many researchers tend to work in isolation and to remain unaware of the issues and problems of priority concern and of the dimensions and implications of such problems.

Competition

University departments and research institutes tend to be competitive, not only among themselves but also with governmental and nongovernmental health-service agencies. Such institutional rivalry is a barrier to HSR, which requires collaboration.

Motivation for Change

Despite these constraints, several developments in recent years have created a favourable climate for universities and research institutes to become involved in HSR and to assume positions of leadership in this field.

Movement toward applied research and interdisciplinary communication

In many of the research disciplines that contribute to HSR, there has been an increasing interest in developing approaches for applying research to problems in the health system and in the community. For example:

- **Clinical epidemiology**, which is fast gaining popularity among medical researchers, aims "to promote the dissemination of epidemiological and biostatistical thinking throughout clinical medicine and health policy-making..." (Bridge 1989). Several medical schools in developing

countries as well as in the industrialized world have established clinical epidemiology units, many of which are linked through INCLEN (International Network of Clinical Epidemiology).

- Similar initiatives are occurring in the field of **social sciences**. Social Science and Medicine Africa Network (SOMA-NET), for example, is a demonstration of the concern of social scientists "to strengthen the contribution of social science to health development" (Bridge 1990c). Medical anthropologists and sociologists have played an increasingly active role in addressing problems within the health system. The fields of applied or practical social science have gained greater acceptance within their disciplines and the demand for social science practitioners who can offer solutions to practical problems has increased.

Improved interdisciplinary communication

There have been efforts at the international level to promote an awareness of the need for better communication between social and health scientists. For example, a meeting was organized by the WHO South East Asian Regional Office (WHO 1989) to promote collaboration in HSR. The group stressed the importance of collaboration between social scientists and health scientists at different levels of HSR and concluded that conferences and research projects organized around certain problem areas such as self-care, safe motherhood, and rational use of drugs would be good mechanisms to promote collaboration.

This approach was developed further by the social science group that met in Pueblo in 1990 in conjunction with the eighth annual review meeting of INCLEN. One of the issues discussed was the need for "transdisciplinary research in which representatives of disciplines transcend their separate conceptual, theoretical and methodological orientations to develop a common approach and conceptual framework to understand health problems or develop a new approach to health care" (Bridge 1990b).

Policy changes related to the research priorities of international funding agencies

A number of the major international agencies that have promoted and supported research during the past decade have developed explicit policies recognizing the importance of HSR in supporting health development and have given HSR the highest priority. In addition, some major donor agencies have created special programs for HSR.

The International Development Research Centre (IDRC), within its Health Sciences Division, for example, focuses on research that takes into account not only the needs identified by health experts, but also the demands and concerns of community members. The health systems program supports projects that examine the various levels of health-care delivery and management, personnel requirements and training, relevant health information systems, efficient allocation of resources, and equitable financing. It seeks to encourage the development of innovative models that will improve the performance of the health systems and involve the community in the planning, implementation, and evaluation of health-care programs (IDRC 1990).

The subprogram, Medicine, Health and Nutrition in the Tropics, of the Science and Technology for Development program of the Commission of the European Communities emphasizes "operational research on health care systems in order to adapt them more effectively to the rural and urban environment of developing countries" (CEC 1989). The Health and Population Research Strategy of the Overseas Development Administration (ODA) finances "activities specifically designed to feed research findings into the decision-making processes of governments and NGO's" (ODA 1991).

International recognition

The technical discussions at the 43rd World Health Assembly (Geneva, May 1990) on the "Role of Health Research in the Strategy for Health For All by the Year 2000" strongly endorsed the central role of HSR in enabling the most effective use of scarce resources to achieve health for all (WHO 1990c).

The Commission on Health Research for Development specifically noted the need for individual and institutional competence in HSR, health economics, epidemiology, and policy analysis in country-specific programs of health research. It recommended that "several international programs — HSR, Health Economics, Inclen, and IHPP among others — that deal with selected aspects of country-specific health research be sustained and strengthened and coordinate their efforts at country level" (Commission on Health Research for Development 1990: 79, 89). The Commission concluded that:

> Capacity building for country-specific health research should be given top priority by every country because of its importance to policy and management decisions for the health sector. It is equally important to create demand for research results among those responsible for health policy and management through effective arrangements for communication and shared priority setting for research.

Concern for resource management, cost containment, and quality assurance

Technological advances have placed expensive "high technology" tools in the hands of clinical practitioners. Simultaneously health-care costs have risen rapidly. This has brought a new awareness among the clinical and hospital management disciplines of issues such as cost containment and resource management and their application in clinical decision-making. An illustration of this concern is seen in the integration of clinical economics training at four university training centres in the INCLEN program (Freund 1990).

The resurgence of interest in quality assurance in health care, particularly in countries that are introducing various forms of health insurance, is another example of this concern. Both quality assurance and resource management are closely related to HSR in terms of goals and purpose and the approaches that are used.

HSR and the clinical academician

Quality assurance and clinical epidemiology are excellent entry points for the involvement of clinical departments in HSR.

Community orientation of schools for health sciences

There have been several initiatives during the past few decades to strengthen the community orientation of education in the health sciences. One example is the Network of Community-Oriented Educational Institutions for Health Sciences, which has over 60 full and associate member institutions that are committed to this effort. The potential of such institutions is augmented through partnerships between like-minded schools. There is growing recognition within the participating institutions that HSR can serve as a tool for strengthening the community orientation of education in the health sciences (Neufeld 1989).

Another example of an initiative to mobilize the resources in universities to support community-oriented health development is that of UNICEF's International Child Development Centre (Bridge 1990a) that seeks

to encourage participating countries to establish "centres of excellence" and knowledge networks that will provide, among other things, training in "community-oriented operational research methodologies."

Phases in Developing HSR in Universities

The acceptance of HSR as an important concern and activity of universities will require considerable change in the attitudes, organizational processes, and even, to some extent, organizational structures. The organizational characteristics of most universities (and research institutes) are such that the pace of change is usually quite gradual. Efforts to introduce and develop HSR within universities should recognize not only the constraints and potentials within universities, but also the need for a planned process of development, in which each subsequent phase capitalizes and builds upon the gains made in previous phases. Review of the development of HSR at national and subnational levels as described at the technical discussions of the 43rd World Health Assembly suggests that it is possible to discern three sequential and overlapping phases in developing HSR, which include consensus building, capacity building, and consolidation (WHO 1990b). These phases apply not only to the health system in general but also to universities and research institutes in particular.

Phases in developing HSR

- The first phase is **consensus building**, the purpose of which is to create a suitable climate for HSR at various levels in the health care system, among academics and in research institutes, by developing a critical mass of committed leaders
- The second phase is **capacity building**, the purpose of which is to develop a critical mass of appropriate research and managerial skills in the country. This involves systematic training efforts focused both in universities and research institutes and in the health system and community.
- The final phase is **consolidation**, which should nurture and support the initial enthusiasm and interest, sustain gains, and institutionalize the changes that have been introduced.

There are several strategies to support the three phases in developing HSR. These strategies, as they apply to the health system in general are described in volumes 1 and 4 of this HSR training series. In brief, the strategies may be classified as:

- Promoting HSR as a management tool among decision-makers in the health system;
- Human resource development for HSR; and
- Strategies for organizational development at national and subnational levels in support of HSR.

This volume describes how these strategies can be adapted for use within universities and research institutes.

CHAPTER 3

CONSENSUS BUILDING: GATHERING INSTITUTIONAL SUPPORT FOR HSR

The initial step in increasing the involvement of universities and research institutes in HSR must be an effort to strengthen the consensus within these institutions that they should contribute through research to health development and that HSR is essential to this process. Senior decision-makers and researchers within these institutions must recognize the importance of aligning research so that it addresses priority health problems and the essential role HSR can play in providing solutions. But how can consensus within the university or research community be fostered?

Strategies for consensus-building will depend on who within the university or research institute first becomes convinced that HSR should receive stronger emphasis. If the initial "change agent" is a dean, director, or head of department, who has considerable formal and informal power, he or she may have the authority to initiate necessary changes in the research agenda and teaching curricula relatively directly and quickly. If, on the other hand, the professional who promotes the need for increased emphasis on HSR is a mid-level staff member such as an associate or assistant professor or middle-rank researcher, greater effort must be spent on gathering support for the desired changes.

Steps in the Consensus-Building Process

Several steps are essential if HSR is to be successfully promoted within the university or research institute setting. These steps include:

1. Performing an "organizational diagnosis," assessing general receptivity, resources, and perceived needs related to HSR.

2. Selecting and implementing appropriate informal strategies to strengthen awareness within the university or research institute of the importance and need for HSR.

3. Selecting and implementing formal strategies for increasing consensus on the role of the university and research institute in HSR for health development.

Each of these steps will be explored in turn.

Step 1: Performing an "Organizational Diagnosis"

Before developing a plan for increasing support for HSR, it is essential to explore several questions:

- What is the current "climate" or general receptivity in the institution to changes such as those involved in increasing its involvement in HSR?

- Who are the key people who can serve as initial allies in the process of strengthening awareness of the importance of HSR?

- Which schools, departments or units within the institution might eventually collaborate on HSR projects and programs?

- What are the perceived needs of potential partners that might be addressed through an HSR program?

Current receptivity to HSR: It is quite possible that introducing HSR into an institution that has primarily a biomedical, clinical, sociological, or economic focus may generate internal tensions. Possible causes of resistance are summarized in the box below.[4]

Potential causes of resistance to the development of an HSR program

- Fear of the unknown and a misconception that HSR is a new and rival discipline rather than a marriage or collaborative endeavour involving several disciplines.
- Reluctance to become involved in a field that may require new skills, such as those needed for working in interdisciplinary teams and for communicating or collaborating with the health system and community. These demands can be threatening to researchers with highly developed skills, but not in these particular areas.
- A feeling that HSR is irrelevant, if the researcher is part of a discipline that is not normally community- or health policy-oriented.
- A worry that a reorientation of priorities toward HSR will weaken a discipline's or a department's status and power base.
- An organizational climate in which relationships are poor and trust is low or where there is a general, long-established tradition that resists attempts to innovate.

Potential allies within the institution: On the other hand, there may be both individuals and groups who would be particularly receptive to HSR. Before developing and initiating a strategy to increase the involvement of an institution in HSR, it is important to determine who, within the institution, can serve as initial allies. Several types of individuals might be particularly receptive. For example:

- Certain faculty members or researchers may have received recent training in HSR through a national or international workshop or special course of study. Training in fields such as operations research, clinical epidemiology, health manpower research, policy analysis, health economics, or other related fields may also provide the necessary knowledge and a positive attitude toward HSR.
- Certain individuals or teams may have already initiated and possibly completed HSR-type projects and be ready to support an expanded role for this type of research within their institutions.
- Some colleagues may have been involved in research or teaching activities that have involved close collaboration with the health system or community, or with researchers from other

[4] Adapted from Volume 4 of the HSR Training Series, *Managing Health Systems Research*, Module 8: Institutional strategies.

disciplines. If their experience has been positive, they are more likely than many others to be supportive of an HSR initiative.

Schools, departments, and programs with potential for HSR involvement: A wide range of groups within the university setting could be considered potential collaborators in an HSR initiative. The box below lists some of the organizational units that should be considered.

University schools, departments and programs with a potential for HSR

Schools or programs of

- Medicine
- Nursing
- Midwifery
- Public health
- Dentistry
- Pharmacy
- Allied health
- Management

Departments or programs of

- Economics
- Sociology
- Anthropology
- Urban planning
- Development studies
- Policy analysis
- Population and demography
- Nutrition
- Health administration
- Quality assurance
- Health education
- Biostatistics
- Social work
- Clinical epidemiology
- Environmental studies

Research institutes that could collaborate on HSR include those with a mandate to focus on program areas similar to those above. Research institutes may be affiliated with the government, the university, a "parent" institute or organization located elsewhere, or, in some cases, may be completely independent.

Identifying perceived needs of potential partners: An important aspect of the assessment process is to identify the perceived needs of potential partners that may be addressed through an HSR program. As mentioned earlier, many of these schools, programs, or departments are unaware of the concepts, potential, and scope of HSR. Some might even view it as a "rival" new discipline rather than as a vehicle through which to achieve their objectives and goals. To promote collaboration rather than rivalry and to capture the interest and attention of potential partners, it is useful to identify the issues or areas of concern that can serve as entry points for the introduction of HSR.

Perceived needs might include:

1. **A need to provide guidance to graduate students as they complete work on theses or other research projects and to provide opportunities for research that is perceived as relevant or useful.**

   HSR can be presented as an approach that allows students to undertake projects of relevance both to their own institutions and to the health system and community.

HSR as an opportunity to highlight a pressing problem

In a particular large hospital in Malaysia, physicians from internal medicine had long been concerned that there was an unconscionable delay in obtaining laboratory results, and the obstetricians were agitated about the tremendous workload in the antenatal clinics. When the senior physician and obstetrician were offered the opportunity to send junior staff to an HSR workshop, a strong selling point in capturing their interest and support was the chance it would provide to highlight their problems and seek solutions in an "academic, research atmosphere" through research projects on these topics rather than through confrontational sessions in interdepartmental meetings.

2. **A need for strategies that address the "application gap"; assisting with the application of basic or biomedical research to improve health or health care.**

   A common complaint in institutes of biomedical research or similar fields is that their research findings are underutilized. When this is a concern, approaches that stress how HSR can develop strategies that lead to successful application may heighten interest.

HSR as a tool for applying biomedical results

Researchers who have painstakingly completed studies on nutritional problems, disease-bearing vectors, etc., are frustrated that years after their findings are published they have not been taken into account in the health services and communities. Demonstration of how the approaches used in HSR can increase the utilization of findings can be a powerful approach to capture the interest of such researchers.

3. **A need for knowledge of social science or qualitative research methods that can be used in health-related research projects.**

   Biomedical researchers may find that the quantitative research methodologies with which they are most familiar may not provide all the tools they need to answer key questions posed by their studies. They may be attracted by a new initiative such as HSR if it will give them access to the additional methodological approaches they need.

HSR as a source of new qualitative or social science methodologies

A team of clinical specialists working in general hospitals, which were referral centres, were designing a study on the appropriateness of clinical management and referral of diabetic patients in peripheral clinics and hospitals. Faced with the problem of developing criteria for "appropriateness" that would be acceptable to their peers, they acquired competence in using focus group discussions and the Delphi technique. This team of clinicians subsequently requested more formal training in HSR and became advocates for HSR.

4. **A need for research tools that can be used in projects in new areas, such as quality assurance or technology assessment.**

Institutions involved in service provision may find themselves faced with new requirements, such as a need to institute an on-going quality assurance program or to demonstrate that decisions concerning whether to purchase new, costly hospital equipment are based on sound analyses. HSR can provide useful methodologies for analyses in these closely related fields.

HSR methodologies as tools for quality and technology assessment

A group of high- and mid-level managers from both hospital and primary health-care settings attended a quality assurance workshop, in which they began to learn about and use new tools for assessing problems identified within their own health settings. They reviewed and then used, for example, observational checklists that allowed them to evaluate the quality of work performed in a wide range of tasks and easily pinpoint deficient areas. They became convinced of the utility of these tools and interested in exploring other HSR-type methodologies.

5. **A need to demonstrate relevance to the priority problems of the community or nation.**

In this era of dwindling resources and increasing need, pressure for the academic and research community to demonstrate that it is contributing in an active and substantial way to the solution of pressing health problems is becoming intense in many places. Convincing evidence that HSR can provide timely, relevant solutions to critical community and wider-scale health problems can be compelling to administrators, teachers, and researchers searching for ways to contribute.

HSR results — providing solutions to priority problems

HSR has been a valuable tool for problem-solving in many outreach programs organized by health training institutions in local communities or wider catchment areas. A **community nursing program in Liberia**, for example, used HSR-type methodologies in community assessments and more focused studies performed by nursing master's students working closely with the community near their school to design and set up a PHC outreach program. This demonstration of the practical output of HSR-type studies helped convince others at the school that it was important to include HSR-related courses in the curriculum.

Step 2: Selecting and Implementing Informal Strategies

Once both resources and perceived needs have been assessed, the individual or group wishing to promote HSR may need to work to gradually increase awareness of the need for HSR within his or her own institution. Particularly if the individual or group initiating the process of consensus building for HSR is relatively junior and there is not yet a "critical mass" convinced of the importance of HSR, the initial moves to strengthen awareness of HSR's potential should be informal, cautious, and opportunistic. Some of the strategies that might be used are summarized below.

1. **Arranging for lectures or presentations highlighting the role of the university or research institute in HSR or related fields.**

   Before beginning an active campaign to gain support for an HSR program, it is often helpful to arrange for presentations that serve both to introduce concepts of HSR and to demonstrate their potential.

HSR-related lectures or presentations

Three instances in which presentations were used informally to introduce HSR and its potential contributions in **Malaysia** illustrate the variety of settings in which the topic might be presented:

- A sociologist who had been recently hired as the first social scientist on the staff of a medical school wanted to develop HSR at the school and university. The dean, who was supportive, suggested that first she needed to be seen as a person with respected professional skills in a setting in which "hard science" skills were valued. One initial tactic he used was to schedule her to make presentations at weekly clinical rounds on (HSR-type) research methods that other colleagues could use to address difficult aspects of their own clinical research problems. These presentations gradually increased the awareness of medical school colleagues of the potential contributions HSR could make in their own fields of interest.

- In 1987, a high-level conference on health-research management brought together research managers from three national universities, various research institutes, and laboratories. A paper was presented by the Director General of Health Services, who wished to sensitize the audience to the need for HSR. His presentation was entitled **"Problem-Solving Research: A Manager's Viewpoint."**

- A rather "high profile" course on clinical epidemiology for clinical masters' students was being given for the first time at one of the universities. The Director of the HSR unit at the Institute of Public Health, who wished to introduce HSR as an important field of study, gave a presentation on **"Health Systems Research and Clinical Epidemiology: are they related?"**

2. **Arranging to report on HSR-related meetings or workshops during department or unit staff meetings.**

   After attending HSR-related conferences or workshops either within the country or outside, one non-threatening way to "spread the word" is to give well-prepared, convincing reports on the activities during departmental or staff meetings. If the response is positive, supporters can be invited to participate in future initiatives.

Reporting on an HSR workshop

A senior staff member from a health-related department at the **University of the Philippines** attended an inter-country workshop on "Managing Health Systems Research" in East Africa. He became convinced of HSR's utility and wanted to develop a large-scale program. He felt the first step was to build consensus within his own department and he began with a full presentation of the results of the workshop at a departmental meeting. Department staff became convinced that HSR would provide useful techniques for serving the community through problem-oriented research and drafted plans for development of an HSR training and research program with health staff and community leaders in a nearby province.

3. **Arranging for staff members to attend conferences, seminars, workshops, and courses on HSR or related topics.**

One useful way to increase awareness and support for HSR before arranging more formal "consensus-building" activities is to send key staff members to HSR orientation or training activities so that they become strong allies for the further development of an HSR program.

Strengthening support for HSR by sending staff to outside HSR workshops or courses

Another important step taken by the senior staff member at the **University of the Philippines** to build consensus within his own department was to identify a colleague who, if well informed, could serve as a key member of the core group that would develop the provincial HSR program. He arranged for his colleague to attend a 2-week workshop for "Training of Trainers in HSR" in a nearby country. This colleague returned with the necessary skills and enthusiasm and was of great assistance in the on-going process of gathering support for the program.

The Dean of the **Medical School in Malaysia** who wanted to increase the credibility and skill of the sociologist who had recently joined his staff, nominated her as a participant in a national HSR workshop. Her increased capabilities on return made her a stronger ally for development of a university-based HSR program.

4. **Asking deans or other key decision-makers in the university or research institute hierarchy to make opening or closing statements at HSR-related courses and using HSR results in presentations to government or community groups.**

One subtle method often used for sensitizing high-level officials to the potential contributions of a new initiative is to ask them to make opening or closing statements at related conferences or workshops and then to draft a convincing and informative speech for them to read. Because policymakers above a certain level have little time to attend conferences or even short orientation sessions themselves, this is often one of the few realistic strategies available for increasing awareness.

A related and equally useful strategy is for those drafting speeches for high-level university officials to quote HSR results to support key points. Frequent use of HSR findings in speeches delivered by

decision-makers can also serve to gradually increase their own appreciation of HSR, and thus their proclivity to support future HSR initiatives.

Speeches drafted for key decision-makers on HSR

Both the Director of the **health sciences centre in a West African country** and the Vice-Chancellor of the university were asked to deliver opening addresses at an inter-country workshop on HSR held at their institution. Neither had been involved in HSR and the speeches that were prepared by workshop organizers increased their knowledge and support of the initiative.

The Vice-Dean of a **Middle East medical school** was invited to chair a regional WHO planning meeting for research promotion and development, with emphasis on HSR. He had never been systematically exposed to the concepts and methods of HSR. After the meeting he became a prime mover for HSR in his university and in the country.

5. **Circulating abstracts or short excerpts on new developments, projects, or approaches that illustrate the importance of HSR and the potential for attractive collaborative projects.**

   Another "low profile" technique to quietly educate colleagues and higher level officials may be to circulate well-drafted short excerpts from journals or newsletters that highlight aspects of HSR that would be of interest to the targeted readers. Topics might include:

   - Descriptions of new HSR-related methods that could be useful in studies that colleagues are designing or conducting.
   - Reports of HSR results or "research in progress" that highlight findings of significance on priority issues or illustrate that well-respected research groups in other institutions or countries are becoming involved in important HSR initiatives.
   - Descriptions of new international initiatives that illustrate the importance of HSR, such as the recent work of the Commission on Health Research for Development, or activities of the University Partnerships program.

   Some publications that could provide useful excerpts for circulation are listed below.

Sources of information on current HSR-related activities

- *Bridge*, an international newsletter linking the producers and users of health systems research and clinical epidemiology (including sections on country updates, organization profiles, new approaches in research training, research in progress, information exchange, and a calendar of events).

- *MORE News*, an update on the worldwide Operations Research (OR) Program (including sections on lessons from the field, OR findings, "What have we learned lately?", and bulletin board).

- *Eastern Mediterranean Region Health Services Journal*, WHO/EMRO, Alexandria, Egypt.

Sources of information (continued)

- *TDR News*, UNDP/World Bank/WHO Special Program for Research and Training in Tropical Disease Research, Geneva, Switzerland.
- *Progress in Human Reproduction Research*, WHO Special Programme of Research, Development and Research Training in Human Reproduction, Geneva, Switzerland.
- *Alternatives, Operations Research in Family Planning and Maternal-Child Health for Latin America and the Caribbean*, biannual newsletter of INOPAL II Program, The Population Council, Mexico City.
- Abstracts or summaries of research findings or descriptions of HSR-related work in progress produced by respected research programs or institutes or featured in journals.
- Publications that illustrate the practical contributions of HSR, such as:
  - *From Research to Decision-Making - Case Studies on the Use of Health Systems Research*. WHO, Geneva, Switzerland, 1990 (SHS/HSR/90.2).
  - *Health Research: Essential Link to Equity in Development* by the Commission on Health Research for Development, Oxford University Press, Oxford, 1990.
  - *Health Services Research - Key to Health Policy*, edited by E. Ginzberg, Harvard University Press, 1991.
  - *Health Systems Research: Does it Make a Difference? The Joint WHO/DGIS/RTI Project in the Southern African Region*, by C. Varkevisser, Y. Nuyens, and G. Stott, WHO, Geneva, 1990 (SHS/HSR/90.1).
  - *Health Systems Research in Action, Case Studies from Botswana, Colombia, Egypt, Indonesia, Malaysia, the Netherlands, Norway and the United States of America*, WHO, Geneva, 1988 (WHO/SHS/HSR/88.1)
  - *Health Systems Research Newsletter*, Joint WHO/DGIS/RTI Project, WHO Subregional Health Development Office, Harare, Zimbabwe.

(See Annex 3.1 for examples of other journals that may provide appropriate material.)

6. Circulating national health-research priority lists and requesting review by relevant university departments and research units before they are finalized.

As countries begin to sense the potential for harnessing the substantial work force available in academic and research institutions to tackle essential national health research, more and more are beginning actively to identify priority issues for research and to encourage or commission studies on critical topics. The developed lists stress HSR as a very important subset within the research agenda. If universities and research institutes are to support the developed agenda, they must be actively involved as contributors and reviewers when priority issues are being identified. An example of the development of a national priority list is presented below.

Development of a national research priority list

The Health Research Committee of the **National Council for Research and Development in Malaysia** was interested in increasing the volume of both commissioned and independent research focused on "essential national health research." After a series of meetings of a task force which included representatives from various universities and research institutes, the committee prepared a preliminary list of topics with heavy emphasis on HSR. The list was then sent informally to deans of various schools for more suggestions. Groups from various disciplines were convened and asked for input into the document. A formal draft was prepared and presented to the Research Council which then formally asked the universities, research institutes, and Ministry of Health to review it. It was discussed at general faculty meetings and then by each department. After a final revision it was published and circulated widely.

The document is consulted by many individual researchers and also used by the various university research committees as they evaluate proposals and select those to be forwarded to the National Research Council for potential funding. Although priorities still change slowly, the broad-based consultative and review process used to develop the list has served to strengthen a consensus that HSR has an essential place in the national research agenda.

7. **Demonstrate the value of the HSR approach by organizing and implementing relevant and productive HSR studies and highlighting their contributions.**

   It is often necessary for the feasibility and importance of HSR to be demonstrated by the successful implementation of a few key studies before more conservative colleagues become convinced. Successful, high-profile endeavours have great power to convert the unpersuaded.

Persuading by example — successful HSR projects

The Faculty Research Unit of **University College Hospital (UCH) of Ibadan University** designed and implemented a project that used operations research (OR) as a problem-solving tool to develop, implement, and test market-based distribution of contraceptives and other simple health-care items and education using illiterate or semi-literate volunteers. The OR project was designed in close collaboration with community leaders and potential providers, and with technical support from Columbia University. The project illustrated how university, government and community groups could collaborate successfully on an OR project that developed and tested innovative and effective strategies for low-cost family planning service delivery. The success of the project convinced UCH to become further involved in related training and research projects. Two other university groups (in Ilorin and Lagos) decided to replicate the project, as well, and then became involved in other OR/HSR type activities. Thus a successful initial project helped to create a consensus that these types of projects were worth doing and spawned a whole series of similar endeavors (see Seidman 1989 for further details on these OR projects).

Step 3: Selecting and Implementing Formal Strategies

Once both top-level decision-makers and staff in important departments or units have been sensitized to the importance of institutional involvement in HSR, more formal strategies to increase consensus can be initiated. These formal consensus-building strategies can focus both within the university or institute itself

and on activities that encourage HSR projects conducted in collaboration with health providers and the community.

1. **Decision-makers within the institution can formally propose that the focus on HSR be strengthened, both within the research agenda and in research training, and can institute internal strategies that will increase support for an HSR program.**

   Once informal support for an HSR program appears to be in place, the core group promoting HSR can propose a series of changes within the department or larger institution. Examples of internal institutional strategies for promoting the successful development of an HSR program are presented below.

Strategies for strengthening HSR within the institution

Introducing a formal proposal that HSR be strengthened in both the research agenda and research-related courses either during a general department or institution-wide meeting or during a planning session devoted solely to this topic.

Reviewing the research priorities of the institution and revising them so that they are more in line with national priorities, which may involve placing greater emphasis on addressing health-systems problems that HSR can help solve.

Establishing interdepartmental or multidisciplinary task forces to review research-related curricula, with responsibility for increasing the emphasis on HSR.

Setting up a mechanism to review promotion and tenure criteria, to make sure that interdisciplinary HSR-type research projects and teaching activities are given full credit.

Linking research units to existing service functions of the institutions so that studies focused on problems of service delivery become more common (e.g., research to improve resource management in university hospitals, studies to assess alternative strategies for nursing follow-up of patients seen by the university hospital's out-patient clinic).

Organizing a short workshop or seminar (perhaps over a weekend) for staff members that introduces strategies for increasing interdisciplinary collaboration (through case studies, management games, role-playing, etc.)

2. **The university or research institute can also actively participate in national consultative meetings or workshops designed to increase support for a national HSR program and initiate other strategies that strengthen the institution's linkages with both the health system and the community.**

   Although strengthening an institution's ability to address health service delivery problems within its own health facilities through HSR in important, it is also critical that both universities and research institutes collaborate with health policymakers, managers, and the community to solve health problems of wider concern.

One strategy that has been particularly successful in the past few years in developing a national consensus for HSR has been the organization of national consultative meetings or workshops to identify the types of HSR needed to support policy and program development and to develop new strategies for promoting and coordinating HSR. Universities and research institutes can both promote the organization of such meetings and play active and essential roles as participants. In this type of workshop, they can begin to establish collaborative relationships with health policymakers, health service managers, and funding agency representatives that will be essential if the HSR program is to address successfully problems of major concern to both the community and larger health system.

National consensus-building workshops on HSR with strong academic and researcher involvement

A **"Consultative Meeting for Health Policymakers, Managers and Researchers on Health Systems Research" for Zimbabwe** was held in March 1988 in Kadoma. Participants included four representatives from the University of Zimbabwe (the dean of the medical school and faculty from the departments of Sociology, Community Medicine and Obstetrics, and Gynaecology) and two representatives from national research institutes, as well as high-level officials from the Ministry of Health, provincial and municipal health units, and WHO. The workshop focused on :

1. Increasing awareness of the scope and potential of HSR as a planning, management, and evaluation tool;
2. Exploring the HSR needs of the Ministry of Health and current mechanisms to coordinate research both within the Ministry and between the Ministry and research institutions;
3. Exploring the needs, achievements, and constraints of HSR at the provincial and district level;
4. Examining the contributions made by the university in HSR, constraints that have hindered the use of results by health policymakers and managers, and potential strategies for increasing collaboration; and
5. Considering proposals for developing a national HSR program and agreeing on a plan of action.

One important emphasis at the meeting was an honest and thorough exploration of the role the university and related research institutes could play in the implementation of an HSR program at national, provincial, and district levels (Zimbabwe 1988; see also Varkevisser 1990).

In **Mexico**, a **consensus-building meeting** was organized in July 1978 by the Ministry of Health, the National Autonomous University of Mexico, and the National Council of Science and Technology. A number of international experts on HSR from England, the USA, and Canada were invited to participate. Researchers from local research institutes were invited to present their experiences in HSR as well. Authorities from the health sector attended and there was a rich exchange of ideas and experiences. As a result of this meeting a number of strategic decisions were made:

1. HSR was recognized as a valid item in the annual budget of the Ministry of Health.
2. The National Council of Science and Technology recognized HSR as an item to receive grants in the Indicative Program for Health.
3. The need to focus research and training in this area was recognized and targeted to be developed in the institutions of higher education.

Once a consensus is developed within the university or research institute that HSR needs to be strengthened, there are two essential tasks that must follow:

- Strengthening the capacity of both staff and students to do HSR; and
- Developing the structures and mechanisms that "consolidate" the effort, supporting an on-going and eventually self-sustaining HSR program.

These tasks are the focus of the last two chapters.

Annex 3.1. A Sample of Journals Containing Articles on HSR.

American Journal of Public Health
AMREF News, African Medical and Research Foundation, Nairobi, Kenya
European Journal of Public Health
Health Policy and Planning
Health Services Research
Journal of Health Economics
Journal of Health Administration Education
Journal of Tropical Medicine and Hygiene
International Journal of Epidemiology
International Journal of Health Sciences
Medical Care
Milbank Quarterly
Social Science and Medicine
Tropical Doctor

CHAPTER 4

CAPACITY BUILDING: STRENGTHENING SKILLS IN HSR

Introduction

Once a consensus has been reached that the university or research institute should play an active role in health development through HSR, the process of strengthening the institution's capacity can begin. The first step in capacity building for HSR should be an assessment of HSR training needs within the institution and resources that can be drawn upon. The information gathered at the beginning of the consensus-building process may be quite helpful (see chapter 3, Step 1). In addition, the WHO *Guide for Planning, Training and Research Programmes in Health Systems Research* (Brownlee 1986a) provides guidelines for a systematic review of HSR training needs and development of an action plan. Steps covered include:

- Reviewing the local training and research situation and relevant experiences elsewhere;
- Identifying information and research needs;
- Determining research manpower and training needs;
- Reviewing training activities, materials, and methods;
- Identifying resources; and
- Developing a training and research plan.

Skills Needed

If universities and research institutes are to become actively involved in HSR, several types of skills may need to be strengthened. These include:

- Research skills;
- Skills in working with health managers and the community;
- Teaching skills; and
- Skills in research management.

Research skills will be needed by undergraduate students, graduate students, and staff, although the types and levels of research skills for each will vary. Skills in working with health managers and with the community on HSR projects are also important for both staff and students. Teaching skills are essential, of course, for staff members who will be providing training for students, health providers, or community members in HSR, and skills in research management are most important for directors of research institutes or heads of university departments or research programs with a large research agenda.

Some quite creative strategies have been developed recently in a number of countries for strengthening skills in these areas. A review of these experiences may be helpful, as new HSR programs are designed. The remaining sections of this chapter examine each of the four skill areas in turn, summarizing the types of skills needed for each of the target groups and then suggesting some of the strategies that may be used to strengthen them, with examples of each.

Strengthening Research Skills

Research skills needed for HSR

The research skills needed by undergraduates, graduate students, and staff increase in complexity. The areas that need strengthening will vary depending on the student's or staff member's discipline and type of initial research training. The list of skills given in the box below is quite general and should be adjusted, depending on the local situation.

Research skills needed for HSR

Undergraduate students:

- A basic understanding of HSR, its uses, and its similarities and differences from biomedical research and basic research in other disciplines.
- Research as an approach to problem solving. An understanding of how HSR provides a scientific and logical basis for problem solving and can assist in decision-making during health practice.
- Skill in identifying useful research questions focused on priority problems.
- An understanding of the research process and a knowledge of sampling, threats to validity and reliability, and other basic research issues.
- Familiarity with data-collection techniques and study types useful in HSR, including the importance of community-based, action-oriented approaches and multidisciplinary research.
- An understanding of how to be a good research consumer, assessing HSR results, and using them to improve health care.

Graduate students:

- A more thorough knowledge of techniques for data collection and analysis used in HSR.
- A basic understanding of the approaches of other disciplines and strategies for multidisciplinary research.
- Ability to develop an HSR protocol or proposal (often as the basis for a thesis or dissertation).
- Ability to conduct or participate in HSR studies, collecting and analyzing data, writing reports targeted to specific research users, and promoting the use of results.

Staff researchers and research instructors:

- Strengthening of basic proposal development and research skills needed for HSR (such as those listed above).
- A more detailed understanding of the approaches of other disciplines and what they can contribute to HSR:
  - Medical or health researchers, for example, may need to know more about the social and behavioural aspects of health and health care and the potential contribution of the social and behavioural sciences, economics, and related fields.

Research skills needed for HSR (continued)

- Social scientists, on the other hand, may need a greater understanding of the perspective of health managers and providers, how social science theory can be used to solve practical health-related problems, and how non-social science disciplines (epidemiology, biomedical or nursing research, etc.) can contribute to HSR.
- Skills in working in multidisciplinary teams on HSR topics that span several disciplines and dealing effectively with the behavioural issues that this involves.[5]

Strategies for strengthening research skills

When an institution decides to strengthen its capability to do HSR, it is usually necessary to start from the top, providing staff with new skills that they can then pass on to those they teach and work with. Thus, in presenting strategies for strengthening HSR skills, we will start with those that focus on the staff, then gradually move toward training activities targeted at more- and then-less advanced students. As will become evident, many of the strategies have been used with several levels of participants. The strategies include:

1. Organizing HSR methodology and proposal development workshops for research and teaching staff to provide new skills that can be passed on to their students.
2. Sending research and teaching staff for more advanced studies in HSR.
3. Encouraging joint appointments, sabbaticals, exchanges, and collaborative projects that upgrade staff members' skills in HSR.
4. Strengthening the skills of both staff and students through participation in HSR studies.
5. Arranging interdisciplinary seminars that promote an active dialogue among researchers on the use of concepts, approaches, and methodologies from a variety of disciplines in HSR and foster the development of collaborative studies.
6. Promoting the use of field research methods that give researchers a new, multidisciplinary perspective on problems being studied.
7. Introducing HSR concepts and methodologies into existing courses and introducing new courses and program of study at the graduate and undergraduate levels.

Each of these strategies will be examined in turn.

1. **Organizing HSR methodology and proposal development workshops for research and teaching staff to provide new skills that can be passed on to their students.**

   Although most senior research staff have an understanding of the research process and basic steps in proposal development, institutions in a number of settings have found it quite useful to organize continuing education workshops for their staff focused specifically on proposal development and

[5] See Volume 4, Module 9, of this HSR training series for a detailed review of behavioural issues in HSR.

research in HSR. Workshops of this type have been organized at the international, national, and local levels and sponsored by groups ranging from WHO, UNICEF, IDRC, and other donors to ministries of health or the institutions themselves. It is most important to organize the workshop in such a way that it will attract the staff targeted to attend and convince them of the feasibility and importance of integrating HSR into their own programs. Workshops of this type, using training materials such as those presented in Volume 2 of this training series, have quickly provided university and institute staff in a number of settings with both the skills and enthusiasm needed to make significant changes in their own research and training activities.

Free standing workshops of this type (see box below) are often pioneering efforts supported by funds from international funding agencies and expertise from outside the host university. They have often provided the necessary catalyst to get the university, health services, and community working together.

Workshops on designing and conducting HSR projects for university and research institute staff

The Public Health Institute of Malaysia has held a number of HSR courses for multidisciplinary groups of university, research institute, and district level health staff, focusing on designing and conducting HSR projects. The courses, based on the training materials provided in Volume 2 of the HSR training series take the participants, step by step, through the process of proposal development, field research, data analysis and report writing as multidisciplinary teams design and conduct their own HSR projects. The courses provide the participants with skills useful in HSR, such as:

- Techniques for selecting topics for HSR studies in priority problem areas, in collaboration with health managers and community groups.
- Strategies for analyzing the problems selected and choosing relevant and feasible areas for investigation.
- Skills for designing studies, focusing on the key components of a proposal (background statement, literature review, objectives, design of the methodology, plan for dissemination and utilization of results, project administration and evaluation, budget, etc.) with special emphasis on the range of methodologies useful in HSR.
- Practice in implementing the studies designed, analyzing results, writing up reports, and actively promoting the utilization of results.

Staff trained through these workshops have continued to develop and undertake HSR projects and have begun to strengthen HSR offerings for their students as well.

The new **School of Public Health in Colombia** wanted to upgrade its teaching in the area of proposal development, with an emphasis on HSR. Training materials were adapted and translated into Spanish and then arrangements were made for key teachers on the faculty to attend a regional HSR proposal development workshop. These staff members then conducted several proposal development workshops at the local level, for both School of Public Health staff and health system personnel, thus encouraging the two groups to work together. As a result of these workshops (without lengthy discussions concerning curriculum change), instructors began integrating HSR and proposal-development skills into the school curriculum (personal communication, German Gonzalez, Facultad Nacional de Salud Publica, Universidad de Antioquia, Medellin, Colombia).

2. **Sending research and teaching staff for more advanced studies in HSR.**

Although the number of current staff members sent for advanced training in HSR has been limited, this may become more common until graduate study programs produce sufficient numbers of research and teaching staff with strong skills in HSR.

Programs for advanced training in HSR

There are a number of programs for advanced training in HSR around the world. Information about these programs can be obtained from the following sources:

- *International Directory of Health Services and Systems Research Centers*, WHO/Ficosser, Geneva, 1991.
- *Compendium of Courses relevant for Health Policy Development*, International Health Policy Program, Washington, DC, 1989.
- *Directory of Educational or Training Programs in Health Services Research*, Association for Health Services Research, Washington, DC.

The INCLEN Program (International Clinical Epidemiological Network) has made a concentrated effort to train core teams of junior faculty members to set up clinical epidemiological units (CEUs) in their home medical schools. More than 27 medical schools in Asia, Africa, and South America have sent multidisciplinary teams of staff members (physicians, statisticians, and recently a social scientist), to receive masters-level training in clinical epidemiology in one of several INCLEN centres. The teams then return home to set up CEUs in their home medical schools. Besides involvement in research activities, some of the CEUs have begun to provide graduate training. Chulalongkorn University (Thailand) now offers a Master of Science degree, which includes training in clinical epidemiology.

3. **Encouraging joint appointments, sabbaticals, exchanges, and collaborative projects that upgrade staff members' skills in HSR.**

An alternative or complementary strategy for strengthening the skills of staff members in HSR is to arrange for sabbaticals, exchanges, and other similar activities that will increase staff members' knowledge of HSR concepts and methodologies and their experience in working with colleagues from other disciplines.

Exchanges and sabbaticals focused on HSR

Exchanges or sabbaticals can be arranged in universities, research institutes, and HSR centres where a multidisciplinary and "decision-linked" approach to HSR is strong. Staff members, for example, might spend time at such places as the **Health Services Research Center at University of North Carolina**, Chapel Hill; the **Korean Institute for Health and Social Affairs**; the **Nordic School of Public Health, Goteberg, Sweden**; the **Department of Community Medicine, University of Zimbabwe**; or the **Royal Tropical Institute, Amsterdam, The Netherlands.**

Exchanges and sabbaticals (continued)

Several multiuniversity health research programs have been developed through the University Partnerships in Essential Health Research project, including programs in Thailand and Nigeria. They offer possibilities for active exchange among faculty members from a wide range of disciplines and development of joint research projects implemented in close collaboration with government and community groups. It may be useful, when possible, to develop multicentre activities that "pair" institutions with complementary areas of expertise.

4. Strengthening the skills of both staff and students through participation in HSR studies.

A very important strategy for upgrading skills in HSR, often combined with one or more of the strategies already discussed, is the "learning-by-doing" approach:

- Proposal development workshops of the type featured in Volume 2 of this training series include supervised implementation of the proposal and a second workshop to guide data analysis and report writing.
- Advanced study programs in HSR or sabbaticals and exchanges usually involve work on HSR studies.
- Participation in an HSR study, even without these other features, can provide very useful experience if the study is appropriately chosen.

While senior staff members and experienced researchers will often find it most useful to collaborate on more complex, higher-level studies, students should be carefully supervised and begin by working on simpler studies or aspects of larger studies appropriate to their level of knowledge. Staff should resist, however, using students as data gatherers or "cheap labour" to perform other tasks. Students' enthusiasm and commitment to HSR will be greatly increased if they are, as quickly as possible, given responsibility and allowed to participate in the entire HSR process, from planning the studies, in collaboration with health managers and the community, to promoting the utilization of results.

"Learning-by-doing"

Malaysia

HSR workshops that include proposal development, fieldwork, and data analysis provide participants with what is often their first real experience in doing HSR. University, research institute, and health staff involved in the workshops in Malaysia, for example, (see Strategy 1) developed and implemented studies on:

- **The effectiveness of management of diabetes in out-patient clinics.**
- **Improving attendance at child-health clinics in the 1 to 4 years age group.**
- **Factors affecting perinatal mortality and methods for improved surveillance.**

"Learning-by-doing" (continued)

Iran

In the Islamic Republic of Iran a country-wide community health survey has been carried out, covering a wide range of information such as housing and environment, food and nutrition, family planning and health, lifestyles, and selected disease and disabilities. Staff and students of various medical faculties were involved in the survey. As a component of the process, training workshops were organized for physicians and other health professionals from the health services and universities, which further resulted in a series of research projects.

5. **Arranging interdisciplinary seminars that promote an active dialogue among researchers on the use of concepts, approaches, and methodologies from a variety of disciplines in HSR and foster the development of collaborative studies.**

   The realization that a multidisciplinary approach to HSR is essential has grown stronger in recent years. Although major restructuring of the university system may be necessary to promote a widespread reorientation toward a multidisciplinary, community-oriented approach (see, for example, the analysis by Bloom 1989), less drastic strategies may begin to foster collaboration among relevant disciplines. The examples below illustrate some of the types of activities that can be organized at various levels for both university staff and students.

Interdisciplinary meetings and seminars on HSR

A series of regional meetings stressing the importance of collaborative approaches to HSR for health development have served to heighten awareness of the importance of interdisciplinary teamwork.

- In 1987, for example, WHO-AFRO sponsored three Subregional Health Development Meetings in **Africa** that addressed, among other issues, the "Role of universities in the strategies of health for all: potentials of universities in multisectoral action in health at the community level" (WHO AFRO 1986).

- In 1989, a regional Meeting of Social and Health Scientists to Promote Collaboration in Health Systems Research was held in New Delhi (WHO SEARO 1989).

The meeting in **New Delhi** introduced participants to a series of case studies illustrating the importance of collaboration between social and health sciences and resulted in a series of recommendations for activities to promote collaboration at national and local levels. Suggestions included:

- Organization of national workshops or conferences around specific problem areas such as self-care, safe motherhood, rational use of drugs, or young child nutrition to encourage development of formal studies involving both health and social scientists at various levels.

Interdisciplinary meetings and seminars on HSR (continued)

- Organization of short reorientation courses on research methodologies for HSR emphasizing social science research methodologies, including courses to acquaint social scientists with national priority health problems and to reorient health and medical scientists toward a holistic approach (WHO SEARO 1989: 19–22).[6]

In **Mexico** a variety of seminars have been used to increase the knowledge of researchers concerning methodologies available from other disciplines that can be used effectively in joint HSR projects. Experience has shown that the following two types of seminars are particularly useful:

- An introductory 5-day seminar, organized as a continuing education course for academic researchers and health managers. After an introduction to the purpose and scope of HSR and a presentation of case studies from *Health Systems Research in Action* (WHO 1988), 3 days can be devoted to presentations on concepts and methodologies from a variety of disciplines that contribute to HSR. Disciplines that can be covered include: health policy analysis; health economics; medical sociology; medical anthropology; health psychology; epidemiology and clinical epidemiology; and health care administration.

  The presentation can stress practical examples of how a particular discipline could contribute to HSR. After the presentation on each discipline, participants can be asked to analyze two priority health problems, using the approaches and methodologies of the discipline presented. Because the problems analyzed would be the same for all sessions, the participants should be able to build up an integrated analysis of each problem, using perspectives from a number of relevant disciplines. The course can then focus in more depth on research methods and study designs of particular relevance to HSR studies and the skills needed to work effectively with academic colleagues, health managers, and the community.

- An HSR seminar focused on priority health problems. This seminar can be held for multidisciplinary research teams that have already selected joint HSR projects and are developing their study designs. Early in the seminar, researchers should spend some time retrieving problem-specific literature from their own disciplines. They can then share the material they have identified with others in the seminar. After time for review, discussions can be held concerning: previous research from the discipline on the selected problem; conceptual and methodological contributions from the discipline useful for the analysis of the problem; and alternative solutions to the problem suggested by the analysis.

  The seminar can serve to greatly increase the researchers' understanding of the potential contributions of team members from other disciplines and substantially enrich the research designs developed.

The feasibility of involving senior researchers in seminars of this type will vary from country to country. In some situations, it may be best to organize very short seminars for senior staff, at least the first time they are offered. Longer interdisciplinary seminars can be organized for students.

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[6] See the recommendations from this report (WHO SEARO 1989: 20–23) for suggestions on additional activities to foster interdisciplinary collaboration.

6. **Promoting the use of field-research methods that give researchers a new, multidisciplinary perspective on problems being studied.**

In addition to seminars, which promote an interdisciplinary perspective, activities that provide researchers with actual field experience with new methodologies useful in HSR can be quite valuable. One useful technique, described below, is the "shadow study" approach, which has been used in Mexico and elsewhere. Other exercises that give staff and students experience with other HSR methodologies may also be quite helpful.

Activities providing field experience with new research methods useful in HSR

The **shadow study** approach has been used extensively in **Mexico** (Duran 1983) to provide researchers with an in-depth understanding of a particular problem in the real-life setting.[7] A multidisciplinary team makes a series of "non-participant observations" of the problem under study, spending from a few hours to several days in a particular site, "shadowing", for example, the patients or health staff as they interact and recording, in detail, what takes place. The actual shadow study may be preceded by a series of practice observation sessions in a similar site, where the team members practice recording their observations, videos of the same situations are made, and then the conclusions of the various observers are compared for reliability, both with each other and with the videos.

The "shadow study" approach can be used at varying levels of intensity for a range of researchers, from senior professionals to students. In situations where senior researchers have little time, but there is a desire to introduce them to new perspectives, the shadow study may be organized as a field outing of just a few hours to see "the health system in action." If the setting visited is a health clinic, for example, social scientists, who normally study the perspective of the patient, may be asked to "shadow" certain health workers, to gain an understanding of the problems they face. Researchers from the health sciences, who are more familiar with the health workers' problems, on the other hand, may be asked to "shadow" particular patients as they try to make their way through the clinic. Observations of the two groups can then be compared. It may be possible to arrange longer shadow study sessions with junior researchers or students as part of a course or training activity focused on analysis of a selected problem.

Other types of practice sessions may be organized to give researchers and students experience with a variety of field methodologies useful in HSR. For example, sessions may be arranged to give health scientists experience with social science data-collection techniques such as **Delphi, the Nominal Group Technique, case studies, focus group discussions, participant observation**, etc. (see Volume 2, Part I, of this training series, Modules 10A–10D, for more details on these techniques and others). Social scientists, on the other hand, may be introduced to more quantitative approaches with which they may not be familiar, such as cost-benefit or cost-effectiveness analyses and various epidemiological methodologies.

[7] The observation, for example, might be made in a health centre, a hospital, an ambulance, a village, the house of a particular family, or the work place of a traditional birth attendant, depending on the problem being observed.

7. **Introducing HSR concepts and methodologies into existing courses and introducing new courses and programs of study at the graduate and undergraduate levels.**

Once staff have both the research and teaching skills necessary,[8] a concerted effort can be made to integrate HSR concepts and methodologies into current curricula in appropriate teaching programs and to introduce new courses and programs of study, where appropriate.

Integration of HSR into existing curricula: This can be accomplished in several ways:

- The basic concept and approaches of HSR can be integrated into various courses for undergraduate students.
- The basic concepts of HSR can be integrated into courses in research methodology that are part of the curriculum of various masters' level and PhD programs.
- Courses in related disciplines (e.g., clinical epidemiology, quality assurance, operations research) can be expanded to cover other areas of concern or methods of investigation that fall within the gambit of HSR.

Integration of HSR concepts into existing curricula

National Health Institute, Botswana

The National Health Institute of Botswana, which offers a variety of training programs in both nursing and paramedical fields, has focused for several years on an initiative to strengthen the research capabilities of its staff and students. One of the results of a faculty workshop held in March 1985 was a recommendation to integrate research concepts into existing courses. An emphasis was placed on HSR-type research, focusing on solution of practical problems and close collaboration with health managers and community groups. Soon after the workshop, a faculty research seminar was organized to develop an action plan to strengthen research capability.

The task force recommended that each program train its own students, with research being integrated into existing courses and field projects. In the nursing program (Botswana 1985),[9] for example:

FIRST YEAR nursing students learn to:
- Understand basic research concepts,
- Read Botswana research studies and utilize the findings, and
- Identify research questions.

[8] A discussion of strategies for strengthening staff teaching skills for HSR appears later in this chapter.

[9] This issue of the *Botswana National Health Bulletin* has a number of useful articles on strengthening research capability.

Integration of HSR concepts (continued)

SECOND YEAR nursing students learn to:

- Identify a specific relevant researchable problem, and
- Develop a research proposal, including review of literature and conceptual framework.

THIRD YEAR nursing students learn to:

- Develop a data-collection tool,
- Collect and analyze data,
- Disseminate findings in writing and in seminars, and
- Critique research studies.

London School of Hygiene and Tropical Medicine

The London School of Hygiene and Tropical Medicine has integrated HSR into several of its masters' level programs. The MSc in Health Planning and Financing, for example, has a component on HSR that includes both lectures and practical group work. The MSc in Public Health Medicine for physicians making a career in the health services or academic institutions in the United Kingdom also covers HSR. The HSR components, in both cases, are taught by members of the school's Health Services Research Unit, which is part of the Department of Public Health and Policy.

Faculty of Medicine, University Kebangsaan, Malaysia

A short course in research methodology is part of the masters' program for graduate students in various clinical disciplines (e.g., internal medicine, surgery, pathology). The focus of the course is on clinical research methods. Recently, several sessions have been added to introduce participants to the concepts of HSR and how such concepts can be applied in the clinical areas of concern.

Developing new courses focused on HSR and related fields: In addition to strengthening the research content of existing courses, it is often necessary to develop new courses focused specifically on HSR and related subjects. These courses are most often offered as part of masters' or PhD programs, but may be organized in some cases at the undergraduate level as well.

One important offering is often a course on HSR methods, focusing on the actual development and implementation of HSR studies. In some settings university staff who have attended workshops on proposal development, fieldwork, and data analysis (based on Volume 2 of the HSR training series or similar material) then develop a similar set of training materials for their students. A course in proposal development is often spread over a semester, with several months for fieldwork (often during the school break), then a follow-up course in data analysis and report writing. Often this series of training activities is linked to production of a thesis or dissertation, or another research-related report required for graduation.

Other courses may be developed to provide students with the interdisciplinary skills and perspective needed for HSR. Courses may focus on one or more of the following methodologies useful in HSR (Brownlee 1986a: 137):

- Cost-effectiveness and cost-benefit analysis and other techniques of economic analysis,
- Epidemiology (including clinical epidemiology),
- Operations research,
- Systems analysis,
- Statistics and biostatistics,
- Surveys,
- Health-care evaluation methods,
- Behavioural and social science research methods,
- Use of computers and microcomputers, and
- The risk approach.

HSR and HSR-related courses

The University of Papua New Guinea has developed an HSR course that is integrated into its Diploma in Community Medicine program. The course is two semesters in length and is taken by provincial health managers. During the first semester, students are introduced to research methods and design (including HSR). Then the course provides a structured environment for students to identify a research problem (with emphasis on priority needs), develop a conceptual model of the problem, conduct a literature review, and develop research objectives and the methodological design for their research. The students then spend 4 weeks carrying out their fieldwork between the first and second semester. In the second semester, students analyze their data and prepare their dissertations (Papua New Guinea 1991).

University of Dar es Salaam, Tanzania: A staff member of the Behavioural Sciences Department, Muhimbili Medical Centre, Dar es Salaam, attended a WHO/DANIDA-funded workshop on HSR, then oriented fellow academicians in the Department of Community Health to the potential for developing a stronger HSR training component within the curriculum. A new training activity has been developed for 4th year medical students, who work in local dispensaries, health centres, and district hospitals. An earlier version of the Volume 2 training modules in this training series has been used to assist the students in developing research proposals on problems they have identified during their rotations in the facilities. Through the modules, students are encouraged to collaborate closely with authorities in the facilities and communities concerned on development and implementation of the studies (Mujinja 1991).

Catholic University of Leuven, Belgium: A course in International Aspects of Health Systems Research is part of the masters' course in Sociology of Health at the Catholic University of Leuven in Belgium. It has 30 hours of course work covering concepts, methods, and policy developments in HSR. Part of the course is devoted to a critical analysis of research proposals and reports from developing countries with emphasis on scientific rigour and policy implementation.

The **Nuffield Institute for Health Services Studies, University of Leeds, England** has several programs that include HSR courses or modules. The postgraduate diploma in Health Planning and Administration, for example, includes a 1-week HSR module providing an introduction to the idea and approaches of HSR and insight into the development of a research proposal. The MA in Health Management Planning and Policy has a one-term (10-week) option course, Social Research and Social Epidemiology, with an HSR orientation and emphasis on qualitative approaches and the evaluation of research. Both of these can be made available as part of the institute's short course program. They can also provide the basis for a personal study program leading into more detailed exploration of particular research topics.

Developing graduate programs concentrating on HSR: In some cases, universities or related schools have developed masters' or other graduate-level programs focused on HSR or health-services studies. Whether this type of concentration is appropriate, depends on the level of research infrastructure in the country and the opportunities for full-time work in HSR (Brownlee 1986a: 146–148).

HSR programs at the graduate level[10]

The **National Autonomous University of Mexico** (UNAM) has a masters' program in HSR in the Multidisciplinary Unit of Iztacala. HSR is also included as part of the masters' program in Sociomedicine of the School of Medicine in UNAM, and in the masters' program of Social Medicine in the Metropolitan Autonomous University in their branches in Xochimilco and Ixtapalapa. In the **National Institute of Public Health** in the masters' program in Health Systems, HSR is viewed as one of the most important tools for managing the health system.

The **Cecil G. Sheps Center for Health Services Research of the University of North Carolina at Chapel Hill** offers several full- and part-time interdisciplinary training programs in HSR for health professionals and others. These programs involve more than 20 post-doctoral trainees and a substantial number of pre-doctoral trainees each year.

Strengthening Skills for Working with Health Managers and the Community

Universities, as mentioned earlier, are under increasing social and moral pressure to come out of their "ivory towers" and become more responsive to the needs of the people. As stressed in a recent UNICEF-sponsored Consultative Meeting on National Capacity Building for Child Survival and Development and Operational Research (UNICEF 1991):

> One way of doing this is to involve university staff and students in working closely with community people and government officials in action-oriented operational research to identify local problems, seek scientifically-based but simple solutions, and set up planning, implementation, monitoring and evaluation mechanisms for development activities at grass-roots levels.

Why is it important to involve the community and local health managers and providers in HSR? A training methodology on "community entry" developed recently for the UNICEF Capacity Building Program summarized the reasons quite effectively (UNICEF Kenya 1991: 39):

> There is increasing recognition of the need to base community-based research planning on an in-depth understanding of local situations, beliefs and strategies. Involvement of the ultimate beneficiaries of research findings not only insures relevance but also use of findings. Direct contact between researchers and target communities during the planning process is necessary because it helps researchers overcome some of the barriers mentioned and also helps them acquire more comprehensive insights into community realities and perspectives. This will subsequently enable them to recommend solutions which are more appropriate, - i.e., those

[10] See the *International Directory of Health Services and Systems Research Centers*, WHO/FICOSSER, for further information concerning HSR programs.

which have taken into account the community's point of view, resources and constraints. To the extent possible it is valuable to involve program managers and service providers in planning any research intended to reflect their work. Their involvement in the planning and execution of the research will, among other things, insure that their priorities are addressed; demystify the data collection process; develop their skills in community data collection; contribute to their sense of ownership of study findings; and provide continuity in using the findings to make necessary decisions.

Skills needed

University staff need well-developed skills and experience in working with managers and the community, as they will often play a leading role in collaborative HSR projects, but students need many of the same skills.

Skills needed for working with health managers and the community on HSR

Staff and students:

- An understanding of when in the research process health managers and the community should be involved, the roles they should play, and techniques for fostering closer collaboration.
- An understanding of how to identify key community leaders, both formal and informal, and gain permission and support for community-focused activities.
- Practice in working with health managers and community decision-makers to assess community and health service needs accurately, identify priority problems, define research questions, and review how potential results would affect policy decisions.
- An understanding of the concepts and process of community development and participation and how the health sector might collaborate with other sectors and the community in the process.
- An understanding of the concepts and methods of other disciplines and fields that provide useful strategies for working with health providers or the community on health system and community problems. Disciplines or fields may include, for example, participatory research (Rahman 1978; Byram 1979; Srinivasan 1981; Tandon 1981; Kassam and Mustafa 1982), medical anthropology or sociology, social work, health economics, agricultural extension, and community nursing.
- Knowledge and experience in using techniques for gathering information from opinion leaders, both in health services and the community, including techniques such as focus group discussion, nominal group techniques, Delphi methods, and various consensus and problem-solving techniques.
- An understanding of how HSR should be linked to the decision-making process and strategies for effectively disseminating results to key user groups (health managers, policymakers, the community) and fostering utilization.

Skills needed (continued)

Staff:

- **An understanding of how to empower students to do research with health providers and the community rather than using students to do research on health providers and the community.**
- **The necessary skills for developing an on-going operational system involving the university, the communities it serves, and health providers in the identification of priority HSR studies, their implementation, and effective utilization of results.**

Strategies for strengthening skills for working with health managers and the community

Three types of strategies are especially useful for strengthening skills for working with health managers and the community: formal training activities, informal exchanges and consultative activities, and the development and implementation of joint HSR activities. Each of these strategies will be examined in turn. As will become evident, a number of groups have begun experimenting with innovative ways to strengthen collaboration.

1. **Organizing training activities for staff and students that foster collaboration with health managers and the community.**

   HSR courses or workshops can be organized so that they will provide an opportunity for university staff and students to train with health managers and community representatives or provide new skills that are likely to increase the potential for effective collaboration. For example:

   - Courses or workshops on proposal development, field research, data analysis, and report writing (such as the course featured in Volume 2 of this training series) can be designed so that health managers and community representatives are included as participants and work as integral members of the participant teams to select, design, and implement HSR studies.
   - An effort can be made to include sessions in HSR-related courses, where appropriate, that provide students with the knowledge, skills, and techniques necessary for working effectively with health providers and the community.
   - Students can be encouraged to take courses in related behavioural science disciplines that will provide important skills, e.g., medical anthropology, community development, social work, community nursing, agricultural extension.

Training activities designed to strengthen skills for working with health managers and the community

- The **National Capacity Building Program for Child Survival and Development**, mentioned earlier, has held several **workshops to provide skills for community-based, action-oriented research**. A workshop, held in **Kenya** in March 1991, included as participants both university staff from a wide range of disciplines and district level administrators and other district staff. Workshop trainers used Volume 2 of the HSR training series and developed and used, in addition, a new module on community entry and techniques for working with the community on applied research type projects (Launiala 1991; UNICEF Kenya 1991, includes a copy of Community Entry). University researchers and district health managers, taking the course together, developed joint projects that involved close interaction with the community.

- **PRICOR (Project for Primary Health Care Operations Research)** held several **workshops focused on development of operations research projects.** Participant teams included both researchers and health managers from the programs in which research would be conducted. The health managers stayed for the first week of the 2-week workshop and collaborated in the design of all but the technical aspects of the projects (Brownlee 1986b). Their participation greatly strengthened the relevance of the proposals and the likelihood that the projects would be implemented and the results used.

- **HSR proposal development courses**, planned by the **University of the Philippines** as part of a project to establish a model HSR program in one province, will include university staff and students, health managers, and community leaders. These participants will *jointly* develop HSR projects on priority health problems within the province. This initiative will be discussed in more detail later in this section.

- A recent **interregional workshop on Managing HSR** held for high-level research managers from each WHO region in **Arusha, Tanzania** (see Volume 4), included a session on "Behavioural Prerequisites for HSR" which featured several role-playing sessions that illustrated, quite realistically, the problems in interaction that arise at different stages of the research process (i.e., the start-up phase of a researcher-initiated project, the problem-identification phase in a manager-initiated research project, the data-collection phase in a research-initiated research project, the research-reporting phase of a project that has produced politically sensitive findings, and the utilization phase in a university-based project). It also included a discussion of the roles of researchers, health managers, and the community in research. The handout from this module "Steps in the Research Process for HSR: Roles of Researchers, Managers, and the Community," is included as Annex 4.1 of this chapter.

2. **Promoting active exchanges, consultation, and other activities among staff and students, health managers, and the community that strengthen the ties necessary for development of joint HSR projects.**

   A number of informal activities that promote active exchange and collaboration among these groups can be arranged. For example:

   - University researchers can be asked to serve as advisors, research persons, or supervisors to HSR projects that are being conducted by health service teams or joint health service–community teams.

- Arrangements can be made for students to serve as interns in district health clinics, community-based health programs, or other similar sites. One activity during the internship can involve work on a simple HSR project with health staff and community groups.

- Arrangements can be made for students from the health sciences (with little prior community experience) to accompany students from other disciplines, whose studies involve active community work.

- Health managers or community leaders can be asked to give lectures or presentations, or to meet for more informal discussions with students, focusing on topics such as problems of health-service delivery or health needs from the community perspective.

3. **Developing and implementing joint HSR projects that involve active collaboration among staff and students, health managers, and the community.**

Learning by being involved in HSR projects implemented in collaboration with health managers (or the government) and the community is one of the best strategies for teaching students why they should work with these groups on HSR and how to do it. Victor Neufeld (1989: 2) of McMaster University has succinctly summed up the importance of this approach:

> We suggest that one way to operationalize the links between governments, universities and communities in the conduct of health systems research is to involve students as active participants at all stages of community-based research, on a systematic basis, and as an integral part of their education. In addition to a common data base that could be used for planning health services, educational programs, research and health policy, there are potential benefits: to governments and health planners, from a large highly-motivated renewable human resource; to universities, from an expanded research capacity; to students, from experiential population-based learning, from training in research methodology, from a broader appreciation of the health care system, from an awareness of the socio-cultural influences on perceptions and information about health, and from an opportunity for community service; and to communities, from a clearer statement of their needs and, ultimately, from more relevant health care.

Many of the examples presented earlier in this chapter emphasize the importance of this three-way collaboration. Two projects, in which collaboration of students with health managers or the government and the community has been especially strong, are highlighted below.

HSR projects with active collaboration among students and staff, health managers, and the community

Suez Canal University, Ismailia, Egypt

The "University Partnerships" project in the El-Tall Keber District of Egypt is a good example of strong student interest in a community-based project. The project, Health Promotion of the District Through Community Participation, was stimulated by medical students of the Faculty of Medicine, Suez Canal University in Ismailia. They gained the confidence of village leaders during the course of their community-based education. These leaders then asked the faculty for help in improving the health of the district. Medical and other students are active participants in planning, data gathering, and related activities. Partners in the project include several university faculties, local government authorities, and the community itself (Neufeld 1989).

HSR projects with active collaboration (continued)

University of Illorin, Nigeria

In 1979, the University of Illorin became part of the Network of Community-Oriented Educational Institutions in Health Sciences. One activity organized by the network involved collaboration with the Mopa village community, some 80 km from Illorin. Mopa served as a model pilot area for the University of Illorin. Both students and staff have been involved with the community in simple health research projects and in providing basic health support (Akinkugbe n.d.: 4). Illorin, along with several other Nigerian universities, has recently developed a proposal for a University Partnerships project, A Community-University-Local Government Partnership Development Project in Health Services and Research. It will include a number of collaborative studies, with results to be used to improve local health services and the curriculum for training health professionals (Network 1990).

Strengthening Teaching Skills

Teaching skills needed for HSR

Research is one of the most complex skills taught in the university and the learning process is traditionally quite long. Although there are some formal methods and courses, the delivery of material is often confined to lecture-type presentations, with students then sent to gather masses of information from the library. Much time is spent in self-guided exploration, with periodic assistance from an academic advisor on an individualized basis. This process has often been effective in terms of the final product, but it is time-consuming for the students as well as the staff, and the research results often go unapplied. The need to produce a much larger number of graduates with adequate research skills calls for the modern educational approaches that have been used in many fields to help people with low entry-level competence acquire sophisticated skills rapidly. These interactive participatory-type teaching methods are quite useful in teaching HSR and can effectively provide students with the knowledge, attitudes, and skills needed for HSR. Teaching skills that are needed to train others in HSR are presented in the table below.

Teaching skills needed for HSR

Basic teaching skills such as set induction, explaining, questioning and reinforcement, and closure.

Skills in facilitating small group discussion and working sessions.

Skills for guiding students through the process of developing HSR proposals as members of multidisciplinary teams.

Skills in designing and using other participatory methods that are often used in teaching HSR, such as demonstration and practice of various research skills, role-playing, field visits, case studies, and brainstorming.

Skills in design and effective use of audiovisual aids in the above teaching activities.

Skills in lesson planning and curriculum development, with special emphasis on strategies for integrating HSR into on-going courses, where appropriate, and designing new courses and programs of study with an emphasis on HSR.

Strategies for strengthening teaching skills

Two types of strategies are particularly useful for transmitting teaching skills for HSR: formal training of trainers and providing staff with the experience of "learning by teaching" and using other training skills. These are described below.

1. **Providing staff with new skills for teaching HSR through training of trainers workshops, seminars, or courses.**

   Several types of training of trainers (TOT) workshops can be organized to provide university staff quickly with skills for teaching HSR. The length and focus of TOT activities will depend on staff needs and time available. Activities, for example, could include:

   - A TOT workshop with sessions focused on: review of HSR and the steps in the research process; educational technology and teaching practice; and planning and managing training in HSR. A workshop of this type usually takes 10 days and involves active practice of new teaching skills and sessions to plan future HSR training activities (see Volume 5, *Training of Trainers for Health Systems Research*, for session plans and trainer's notes for this type of workshop).

   - A curriculum development workshop, focused on techniques for curriculum development and working sessions to either integrate HSR into existing curricula or develop new courses or programs. (Curriculum develop workshops are discussed in more detail in chapter 5).

Training of trainers courses and workshops

National University of Malaysia, Kuala Lumpur

A 10-day course on training trainers in HSR was held by the National University of Malaysia, Medical Education Unit, in December 1990, with support from WHO and IDRC. Participants included staff from eight universities and research institutes in Malaysia and five other countries in Asia. The course had three components: a review of HSR and the research process, sessions on educational technology, and sessions on planning and managing training in HSR.

After a review of HSR and an introduction to planning a short course on the research process, participants went actively through part of the research training process themselves, working in small groups to select and analyze a research problem, develop objectives, and select variables. There were formal sessions on various aspects of teaching such as formulation of learning objectives, selection of teaching methods, development of lesson plans, and facilitating small group discussions, each involving practical exercises. Several microteaching practice sessions were held in which each participant taught a short (5-minute) session, using a basic skill such as explaining or questioning and reinforcement while presenting a topic, such as "the difference between reliability and validity" or "the important aspects of a quasi-experimental research design." The course ended with sessions on planning and managing short courses in HSR. Participant teams developed and presented plans for HSR courses they would implement in the future.

Training of trainers courses and workshops (continued)

El Colegio de la Frontera Norte, (El COLEF) Tijuana, Mexico

El COLEF held a training trainers course in HSR in July 1991 for academicians and researchers from the border region of Mexico as part of the NUREDESS project (Research and Innovation in Health Systems in the Northern Frontier Region of Mexico). The 9-day course prepared academicians and researchers from the border provinces to serve as trainers for a course on "research methodologies for solving operational problems in the health systems of the northern frontier of Mexico." The TOT course was much like the course held in Kuala Lumpur (see above). All the participants, however, worked in teams to develop the schedule and teaching modules for the up-coming methodology course, which will be given in four, 1-week sessions. These sessions will focus on:

1. Analysis of health systems in the frontier region and problem identification,
2. HSR methodology and preparation of research proposals,
3. Processing and interpretation of data, and
4. Use of the research results for design of health system changes.

After each presentation in the TOT course (for example, on learning objectives or lesson plans), the participants worked on development of those components of the up-coming course sessions.

2. Giving staff new skills for teaching HSR through "learning by teaching" activities.

One useful way to unobtrusively increase the skills and confidence of academicians in using new teaching strategies for HSR is to involve them as trainers in workshops and related research activities that use these new skills outside the university. This may involve, for example:

- Enlisting university staff as trainers for HSR proposal development and research workshops held for groups such as district health personnel, hospital clinicians, or junior researchers from health-related research institutes.

- Asking university staff to serve as facilitators, tutors, or resource persons for selected research projects being implemented by research teams such as ministry of health or provincial or district health teams that need guidance.

"Learning by teaching" activities

A series of HSR methodology and proposal development courses was held by the **Project for Strengthening Health Delivery Systems in West and Central Africa**, in collaboration with WHO/AFRO. Several core trainers developed the participatory training methodology, but additional trainers were needed. University staff with expertise in HSR were invited to serve as co-trainers, including academicians from the University of Dakar, University of Ghana, etc. Through the experience, these teachers developed new training skills that were then used in the university.

Tutors from the **National Health Institute in Botswana** who participated in an HSR methodology workshop were asked to assist district health teams in revising and utilizing the results of research projects (Owour-Omondi 1988: 20).

The **Ministry of Health and Public Health Institute in Malaysia** have used a number of researchers and academicians as both trainers and resource people in HSR courses organized for district health teams and as supervisors or tutors for research projects designed during the courses. The use of university staff both increased the ministry's pool of trainers for these courses and upgraded the teaching and research skills of the academicians involved.

Strengthening Skills in Research Management

Skills needed in research management

"Research managers" include directors and heads or chairs of departments and units in universities and research institutes that are involved in HSR and in agencies that fund research. Managers in various government ministries who have the responsibility of coordinating and developing health and health-related research may also be viewed as research managers. Thus, research managers are a group that plays a critical role in developing and implementing policies and strategies in support of HSR. It is this group that can integrate and consolidate the gains made by the training of other groups (i.e., decision-makers, health workers and junior researchers, and experienced researchers and academics).

The purpose of training research managers is to enable them to:

- Advocate, promote, and support the development of HSR and its use to improve the health of the people;

- Contribute to the development and implementation of appropriate policies and strategies for
  - Developing manpower for HSR,
  - Realigning research funding to support national health priorities,
  - Establishing mechanisms to stimulate and sustain good quality research in support of health development, and
  - Promoting the use of research findings in managerial decision-making.

Strategies for strengthening skills in research management

Two types of strategies are available for strengthening skills in research management: formal training workshops specifically designed for senior managers of research; and visiting fellowships that enable

managers to visit other research centres. There is some documented experience regarding each of these strategies.

1. Training workshops for research managers

Managers who are fairly high in the management hierarchy in their own countries are more likely to attend and give serious attention to courses organized on an intercountry or regional basis than courses organized within one country. Furthermore, in many countries there is overt of covert rivalry between institutions. When managers from such "rival" institutions attend an intercountry or regional course, interaction with peers from other countries is likely to promote positive communication and blunt old rivalries. Because research managers are likely to be at relatively high levels within their own administrative hierarchies, they are willing, for the most part, to attend courses of only very short duration (e.g., 6–10 days). Therefore, intercountry workshops of 1 to 2 weeks have been found to be most appropriate for training research managers.

The structure of the workshops should be **organized but flexible**. Participants are experienced managers. Active participation should be the main characteristic of the workshop. It could include:

- a review of the purpose and scope of HSR, an analysis of the special characteristics of the research process in HSR, and the role of researchers, managers, and the community in this process;
- an introduction to some useful, but less-utilized, research methods;
- an overview of the issues involved in developing HSR at the national level as well as within a research or academic institution; and
- hands-on practice in the various negotiation skills that are needed during the HSR process.

(See volume 4 of this training series for session plans and training notes for this type of workshop.)

Workshops for research managers

Two International Training Workshops on Health Systems Research, sponsored by WHO and funded by the Danish International Development Agency, were held in Kuala Lumpur, Malaysia, in 1988 and in Arusha, Tanzania, in 1990. Participants were senior managers from research institutions, universities, and ministries of health from 26 countries (Bangladesh, Botswana, China, Costa Rica, Czechoslovakia, Ethiopia, Ghana, Hungary, Islamic Republic of Iran, Kenya, Republic of Korea, Kuwait, Malawi, Malaysia, Mexico, Morocco, Mozambique, Myanmar, Pakistan, Philippines, Sri Lanka, Sudan, Tanzania, Turkey, Uruguay, and Yugoslavia).

The workshops consisted of nine modules. Each included one or two lecture/discussion sessions and a number of group work exercises followed by a plenary presentation. Participants were encouraged to contribute ideas based on their own experiences so that all could benefit from various country and cultural perspectives. The final module contained a number of role-playing sessions. During the workshop, participants also developed individual plans of action, which they implemented in their home countries or institutions.

2. Visiting fellowships

Visiting fellowships can also be a useful strategy for strengthening skills in research management. Arrangements can be made for managers to visit research centres with strong HSR programs. An organized program should be arranged for the fellowship period, including:

- Individual discussions with senior research managers to discuss appropriate issues,
- Opportunities to observe relevant facilities and technologies (e.g., electronic networking, computerized databases for literature searches, equipment related to specific research topics), and
- A chance to participate in relevant meetings (e.g., research reviews, monitoring sessions focused on research budget, meetings to plan strategies for developing proposals or bids for future projects).

If fellowships of this type are well organized, they can often provide practical insights that are not easily gained in workshops or seminars.

Annex 4.1. Steps in the research process for HSR: roles of researchers, managers, and the community[11]

PLANNING THE RESEARCH

Components of protocol	Roles of researchers, managers, and the community
1. Title	
Should be brief but sufficiently descriptive.	Make a **joint decision**. It is useful to defer the decision until the objectives and scope have been clarified.
2. Background	
Brief description of the problem and its importance.	Have **joint discussion** session to determine: • **What type** of information will assist managers or community leaders in making decisions regarding the problem. For example: - cause of the problem; - factors contributing to the problem; - relative importance of various factors; and - comparative effectiveness of various solutions. • Can existing statistics be analyzed to provide the necessary information? • Can research provide the type of information the manager or the community needs? • How will managers or the community use the information when they receive it? (i.e., What actions will they be able to take based on the results?)

[11] Adapted from Pathmanathan, I. 1985. The HSR process. In Report on the National Workshop on the Integration of Health Systems Research and Management, February 1985, Malaysia. Ministry of Health, Kuala Lumpur, Malaysia.

Components of protocol	Roles of researchers, managers, and the community
3. Literature review	
Summary of published and unpublished information relevant to: • Understanding the problem; and • Methods of investigating or resolving the problem.	**Researchers** to search for and review literature, documents, and files, and to discuss in depth with people who have firsthand experience of the problem. **Managers** to search for related circulars, guidelines, minutes of meeting, reports of conferences, etc., and make available to researchers. **Community decision-makers** to indicate what information on the problem can be gathered from knowledgeable groups and individuals in the local area.
4. Objectives	
Statement of the objectives or aims of the research, (i.e., what information will be obtained and how it will be used).	**Joint description** by researchers, managers, and community decision-makers when appropriate.
5. Approach	
Scope (how much to include within the research project). For example: • the number and type of problems; • the number of categories of populations/services; and • the number of months/years to be studied.	**Joint decision** by managers and researchers based on: • Availability of resources; • Feasibility of collecting valid data; • Nature of the problem being studied; and • Urgency with which results are needed. **Community decision-makers** to participate in discussions if research focuses on problems of importance to the community.
Research design Selection of study type and development of the research design.	**Researchers** to decide, based on the nature of the problem, objectives of research, the type of information required, and the resources available. Managers and community decision-makers to review for feasibility and ethical considerations.

Components of protocol	Roles of researchers, managers, and the community
Methodology for data collection • Types and characteristics of data to be collected (e.g., sociodemographic data, health status, knowledge, opinion types, cost of health resources or interventions). • Methods of data collection and instruments (e.g., interview, review of records or cards, observation of behaviour).	**Researchers** to decide after discussion with managers and, where relevant, community members concerning: • Objectives and design of the research project; • Expected outcomes of the research; and • Operational feasibility of various methods of data collection.
Data processing (i.e., compilation of the data into tables manually or by computer).	**Researchers** to determine method and cost. **Managers** and **community leaders** to assist researchers (if necessary) to contact relevant resources and make administrative arrangements.
6. Budget • Personnel and allowances (e.g., for meals and lodging during field visits). • Equipment and materials (e.g., vehicles, calculators, office supplies). • Data processing costs.	**Researchers** to work out details. **Managers** to: • Review budget to determine whether it is possible to absorb costs through internal adjustments and temporary redeployment of resources. • If costs cannot all be absorbed, to consider with researchers whether suitable funding agencies can be approached by either researcher or manager.

IMPLEMENTATION OF HSR PROJECTS

Activities during implementation	Roles of researchers, managers, and the community
1. Review and revision of the protocol in accordance with resources actually allocated to the project.	**Researchers** to review and discuss proposed revisions and their implications with **managers**.
2. Design and pretesting of instruments and methodology.	**Researchers** to pretest with input from computer programmer or statistician (if necessary).
3. Selection of sample.	**Researchers** to select with guidance from statistician (if necessary).
4. Preparation of manual for data collection.	**Researchers** to prepare the manual.
5. Design of tables for compiling data.	**Researchers** to prepare in consultation with data processing personnel.
6. Training of interviewers and data collectors.	**Managers** to make resources available in accordance with approved project plan including, for example: • Manpower for data collection/interviewing; • Training facilities; and • Support for training costs. **Researchers** to do training. **Community members and health service personnel** to serve, when appropriate, as data collectors.
7. Preparation of data collection areas.	**Managers** to make the necessary administrative arrangements including, for example: • Sending information circulars to staff; • Disseminating information to public/patients; • Providing physical facilities for data collection, interviewing, storage, etc.; • Making transport arrangements; and • Reallocating duty rosters to facilitate temporary assignments for staff. **Community leaders or representatives** to make arrangements for: • Data collection in the community; and • Notification of other community authorities. **Researchers** to liaise with managers regarding specific requirements of the project.

IMPLEMENTATION OF HSR PROJECTS (continued)

Activities during implementation	Roles of researchers, managers, and the community
8. Collection of data.	**Researchers** to monitor and supervise data collection and identify and resolve operational problems. **Managers** to help solve operational problems and provide administrative authority and support for the data collection process, for example, by providing access to records, boosting morale and providing transport and, if appropriate, staff for the data-collection process. **Community decision-makers** to identify community volunteers or workers to collect data when appropriate.
9. Checking and editing completed formats.	**Researchers** to organize and supervise logistics. **Managers and community** to provide manpower and physical facilities.
10. Data processing.	**Researchers** to liaise with data processing personnel.
11. Analysis of data and preparation of draft report.	**Researchers** to analyze data, derive conclusions pertinent to the objectives of the project, and prepare draft report.
12. Discussion of draft report.	**Researchers, managers,** and **community decision-makers** to discuss draft report to consider validity and relevance of findings and recommendations.
13. Final report.	**Researchers** to prepare and present report to relevant authorities and communities.
14. Policy decisions concerning follow-up action.	**Managers and community decision-makers** who are in the relevant positions of authority to decide on follow-up action based on: • Validity and relevance of report, • Priority of problem and recommendations, and • Feasibility of follow-up action. **Researchers** to provide clarification on validity and relevance (if necessary).

CHAPTER 5

CONSOLIDATION: INSTITUTIONALIZING HSR IN UNIVERSITIES

Sustaining HSR

To sustain the initial gains made in introducing HSR and developing interest, support, and capacity for HSR within the university community, it is necessary to develop organizational structures and mechanisms that will ensure that HSR does not remain highly dependant on the efforts of a few committed and dedicated individuals. There are several strategies for institutionalizing HSR, ranging from fairly simple and impermanent to highly complex, long-lasting strategies.

The strategies for institutionalizing HSR may be related to:

- Sustaining **training** in HSR;
- Sustaining **research activities**; and
- Sustaining the **university partnership with governmental and nongovernmental health-care organizations and with the community**.

Strategies for training in HSR may range from casual, optional training activities to a wide variety of formal programs organized from the undergraduate to the PhD levels. Similarly, research programs may range from those that involve simple studies done by undergraduate students as part of their training programs to full-fledged research programs in health systems research centres that serve as "centres of excellence" in the field of HSR. Partnership with managers and the community can range from occasional collaboration through mutual membership in decision-making committees to formal arrangements in which the university assumes responsibility for health care and development for a defined community.

Each university (or research institute) must make its own decision concerning how far along the spectrum of formal program development it wishes to progress. This decision is likely to be governed by the institution's philosophy, its resources, its relationship with both the health system and the community and the demands made upon it.

Strategies to Sustain Training in HSR

A good portion of the discussion in chapter 4 focused on strategies for strengthening HSR skills, among both staff and students.

Sustaining HSR skills among university staff

Some of the mechanisms for upgrading the knowledge and skills of teaching staff in the area of HSR may be less essential once HSR is appropriately integrated into the courses that future teachers will take as part of their own basic and graduate education. Until then, however, it will be important to ensure that workshops and other activities that strengthen staff skills in HSR are provided on a continuing basis.

These activities, as mentioned in chapter 4, may include:

- HSR methodology and proposal development workshops,
- Opportunities for more advanced studies in HSR,
- HSR-related sabbaticals, exchanges, and collaborative projects, and
- Interdisciplinary seminars on HSR and sessions that introduce new research methodologies.

Sustaining training in HSR for students

Strategies for strengthening the skills of students in HSR were also covered in chapter 4. They include:

- Integrating HSR into the existing curricula,
- Developing new courses, focused on HSR and related fields, and
- Developing graduate programs concentrating on HSR.

This chapter will examine some of the mechanisms that can be used to integrate HSR into university curricula, so that HSR-related training will be available on a regular basis.

Mechanisms for integrating HSR into the curricula of universities

In most universities individual lecturers who are responsible for specific courses have the responsibility and authority to integrate HSR into relevant subject areas within those courses. Constraints may include the limitations of their own skills and knowledge in HSR and their ability to find innovative methods of integrating HSR into the course content without expanding the time needed for the course or deleting other essential components. Staff who have had training in HSR as well as curriculum development are in a better position to successfully integrate HSR in appropriate courses. Often the initial impetus for changing the curriculum may come from staff who have gained new ideas and skills while attending HSR courses or workshops.

Other mechanisms that can trigger curriculum reviews and revisions are comments and suggestions from external examiners and external course evaluations.

Examples of the process of reviewing the curriculum to integrate HSR

Course on Health Care Evaluation and Management Skills in Canada

This 3-month course at the University of Toronto's Faculty of Medicine was designed to enhance research and management skills of senior physicians from medical schools and policy advisors from developing countries. It is supported by IDRC and the Rockefeller Foundation and linked to INCLEN. In 1990, an external evaluation team organized by IDRC recommended, among other things, that the HSR orientation of the course be strengthened through, for example, "increased use of integrative case studies to illustrate relationships between epidemiologic and health systems studies in clinical settings and similar research which is oriented to public health settings; and that greater emphasis be given to instruction in the social sciences as they relate to epidemiologic and HSR" (Pathmanathan and Segall). The course is being developed in this direction.

Examples of the process of reviewing the curriculum (continued)

Nursing education programs in Malaysia and Botswana

In both Malaysia (Malaysia 1988) and Botswana (Owour-Omondi 1988), key nurse educators who had attended HSR workshops decided that it would be useful to integrate HSR into their nursing curricula. Workshops were convened, during which groups of nurse educators reviewed the various components of the curricula and selected post-basic programs such as public health nursing (a 1-year program) and ward management (a 6-month program) into which to integrate HSR. They identified educational topics and nursing practice situations within the curricula where concepts of HSR and scientific methods of data collection (e.g., interviews, non-participant observation, focus group discussions) could be introduced and made appropriate changes without extending the duration of the courses.

The development of new courses or programs usually requires the approval of decision-making bodies at various levels in the university. Such efforts, therefore, must be preceded by consensus-building among the key opinion leaders in these bodies. It is only after there is a general recognition of the relevance and importance of HSR in universities that efforts to establish specific courses in HSR will be successful. The influence of international and national networks is particularly valuable because of the prestige and credibility that is associated with the peer groups of decision-makers who are members of such networks. Meetings of deans of medical schools or vice-chancellors of universities are examples of networks at the national level. INCLEN and the Network of Community-Oriented Educational Institutions for Health Sciences are examples of international networks.

Application of strategies

To select and use strategies judiciously to introduce HSR into the curriculum, it is necessary to consider the institutional environment, the climate of opinion regarding the role of the institution in society, and the strength of the institution's commitment to Health For All. Prime movers must be imaginative, sensitive, and prepared to seize suitable opportunities to introduce or promote appropriate strategies. The example that follows, from the University of Ghana, illustrates the many approaches that can be used to introduce HSR into a variety of settings in one educational institution.

Integration of HSR into the social science curriculum at the University of Ghana[12]

Mechanisms for curriculum review

Curriculum development in the university is an ongoing, continuous activity that takes place at the individual lecturer level. The lecturer or the professor can introduce new topics into his course program if it has already received the approval of the faculty and academic boards.

If the program is an entirely new one, then the lecturer must prepare the rationale, objectives, and the subject content for the course. The new program must be discussed at the department level, then by the Faculty Board, and finally it must receive the approval of the Academic Board.

[12] Contributed by Patrick Twumasi, Dean of the Faculty of Social Sciences, University of Ghana.

Integration of HSR (continued)

In my case, as the Dean of the Faculty of Social Sciences and also as a person who teaches the course on medical sociology, it is easy for me to introduce topics in HSR into courses in my department. It is also easy for me to introduce the topic for discussion at meetings at the department and Faculty Board levels.

In the University of Ghana's Faculty of Social Sciences, we have a faculty newsletter, the main purpose of which is to disseminate information from senior members regarding the development of the university curriculum. The information is usually obtained by attending conferences, seminars, and workshops internally and internationally.

Introducing HSR into our curriculum

In 1991, I attended a conference in which discussion centred on the need for the development of HSR to strengthen health systems within the country. On returning to my faculty I became convinced of the desirability of introducing HSR into the curriculum.

Considering my options, I decided on the following:

1. I introduced it in my ongoing course in medical sociology (sociology of health) for undergraduate students.
2. I introduced it to my graduate students who were reading for their Masters and PhD degrees in Sociology.
3. As the Dean of a Faculty, I also discussed HSR with the Dean of the University of Ghana Medical School, who undertook to discuss its implications with his faculty members who were working on medical curriculum development.
4. I suggested that the heads of relevant departments such as Community Health and Nursing introduce it in their respective curricula.
5. I discussed the importance of HSR at a meeting of the Ministry of Health Committee on Medical Education, of which I am a member, recommending that it be introduced into the curriculum of the new faculty of Health Sciences at the University of the North.

Developing linkages

In Ghana, it is part of the government's health policy to find appropriate ways to strengthen the PHC initiative as an instrument for socioeconomic development. This policy has also resulted in the development of district health management teams (DHMTs). At present there are 110 DHMTs to be headed by district public health doctors. HSR could be a very useful tool as they attempt to solve management problems.

I also have met with a senior epidemiologist in the Ministry of Health and discussed the need to build a firm network to integrate HSR into the curricula of all relevant institutions in Ghana. We have identified GIMPA (Ghana Institute for Management and Public Administration), which conducts refresher courses and seminars for health personnel from the English-speaking countries in West Africa, as a potential partner in the network. In 1990, we brought together a number of key persons in universities, regional institutions, and other higher institutes to build a consensus concerning the development of HSR.

Strategies to Sustain Research Activities

The role of universities in HSR

To develop appropriate strategies to institutionalize HSR in universities and research institutes, it is necessary to clarify the various roles of these institutions in implementing HSR. Taking into consideration the earlier discussion (chapter 1) regarding the different levels of complexity of research needed to support different levels of decision-making and the recognition that research is needed to expand the boundaries of human knowledge as well as to ensure optimum benefit from the knowledge already available, it is possible to identify the following roles for the university:

In country-specific HSR:

- To take the lead (or principal role) in complex HSR projects intended to provide country-specific information; and
- To provide guidance and supervision for health and health-related personnel from other agencies who are doing less complex HSR projects intended to provide country-specific information.

In expanding the boundaries of human knowledge:

- To generate new knowledge that is universally applicable to improve the functioning of health systems.

To sustain the ability of researchers in universities and research institutes to perform these different functions of HSR, the organizational structures and mechanisms in the institutions should facilitate:

- Multidisciplinary research;
- Communication with health managers, health personnel, and the community;
- Multiagency/multicentre research; and
- Access to up-to-date information and literature.

Types of organizational structures to support HSR

Several types of structures have been found to have the above characteristics and to be supportive of HSR. The examples in this section have been selected to illustrate organizational characteristics that appear to be important.

1. A multidisciplinary institute

One of the barriers to multidisciplinary research is the vertical structure of departments or faculties in universities. Certain universities, as illustrated by the example below, have set up institutes that have been able to successfully encourage both multidisciplinary research and closer collaboration with a wide range of government sectors and the community.

Example of the development of multidisciplinary institutes

In **Nigeria**, the Ahmadu Bello University and the University of Maidurguri have set up **multidisciplinary institutes** that, although basically service-oriented, have also incorporated teaching and research activities. The Institute of Education and the Institute of Administrative and Management Studies are examples of such institutes, which have been able to involve the government and the community, through consultative mechanisms, in selecting priority concerns for research and investing their limited funds for research in projects that involved many sectors. "The greatest impact has been made by the parent universities in the organization and delivery of services to the community through their introduction of mechanisms for closer collaboration between sectors, e.g., health, education (adult and functional literacy) and engineering (water and environmental sanitation); agriculture (nutrition) and veterinary medicine (zoonoses); social sciences and health (demography, health education), family planning and other practices. The Institutes, having proved their point, became agents for stimulating and further developing university departments and faculties which had been rather slow in developing the necessary links which would have portrayed universities as progressive and truly multisectoral institutions." This has laid the groundwork for multidisciplinary and intersectoral research (Shehu n.d.).

The **Cecil G. Sheps Center for Health Services Research of the University of North Carolina at Chapel Hill** (UNC-CH) is an example of how short-term investment of funds from the US government helped to institutionalize a structure and process through which a diverse program of HSR activities could be developed within a large and complex university setting. In 1968, funds from the US Department of Health and Human Services (formerly the Department of Health, Education and Welfare) were made available to selected universities through competitive grant reviews for the purpose of organizing multidisciplinary research, evaluation, and technical assistance centres with a focus on the complex problems associated with the organization, financing, and delivery of personal health care services. UNC-CH was awarded a 5-year grant to begin such a centre.

At UNC-CH, the HSR centre was set up as an independent unit within the Division of Health Affairs, drawing participating faculty from the five health science schools (medicine, dentistry, nursing, pharmacy, and public health), as well as from the schools of law, social work, business, and the other relevant departments of the Division of Academic Affairs (e.g., sociology, psychology, anthropology, economics, political science, city and regional planning, and history). Although all faculty had their primary appointments in one of the academic departments of the university, any member with a scholarly interest in the study of health services or systems could hold a secondary appointment (for some variable proportion of time and effort) as a research associate of the Sheps Center.

The initial development grant provided funds through which a few faculty could be recruited to join particular academic departments with the understanding that a substantial proportion of their time would be available to engage in HSR activities.

The program of research undertaken by the Sheps Center was, from the outset, developed in close relation to the interests and concerns of public-sector health care organizations (such as the North Carolina State Division of Health Services and area neighbourhood health centres serving disadvantaged populations) as well as the leading private-sector health organizations (such as the North Carolina Medical Society, the North Carolina Dental Society, and the North Carolina Hospital Association). The Center's present policy board consists of university academic leaders as well as key figures from the public and private sectors outside the university.

Example of the development of multidisciplinary institutes (continued)

Because UNC-CH is located in a predominantly rural, relatively low-income state, much of the early work of this centre focused on the problems of assuring access to adequate primary health care for disadvantaged rural and minority populations in the southeastern United States. In addition, major research programs have been developed dealing with such problems as child health care, health care organization, aging and disablement, health promotion and preventive services, and mental health services. Recent interests have expanded to include the study of medical effectiveness and clinical outcomes, as well as involvement in international health.

After the initial 5 years of government support, the Sheps Center has been largely funded by project-specific grants and contracts from both public and private donors. In addition, the State of North Carolina has provided annual core administrative support to the Center representing approximately 15% of its total budget.

At present, the Center has a full-time staff of over 100 and more than 150 affiliated faculty research associates representing more than 20 academic disciplines. The Center offers several interdisciplinary training programs in HSR. Although it was created through the short-term availability of governmental "seed money," it has grown to several times its initial size through successful competition for other forms of public and private-sector support (DeFriese 1991, personal communication).

Another well-recognized problem in universities in developing countries is the scarcity of resources. To cope with the competing demands of teaching and research with the meager human and monetary resources usually available, some universities have set up institutes solely devoted to research.

Example of the development of institutes focused solely on research

A group of **eastern and southern African universities** set up **research institutes within their institutions** to carry out research on a full-time basis. Although this has helped, it is relevant to note that an ESAURP review comments, "A number of problems other than time and lack of resources have emerged among universities in the ESAURP region. First, most of the research conducted is directed by the founder... (WHO is)... out of the University influence. Secondly... most of the research is either carried out by foreigners or by staff still... working on postgraduate degrees" (ESUARP 1987).

2. A division of HSR in a university

The history of the development of the division of HSR in the **University of British Columbia, Canada**, illustrates several of the issues that arise in developing an HSR department within a university.

A division of HSR in a university

A health sciences centre was set up in the University of British Columbia in the early 1960s to meet the rapidly changing education needs of the health care system. A multidepartmental coordination committee consisting of the deans of Dentistry, Medicine, and Pharmaceutical Sciences; directors of the schools of Human Nutrition (Home Economics), Nursing, Rehabilitation Medicine, and Social Work; and representatives of the Clinical/Community Program and the Council of University Teaching Hospitals provided direction for the Centre.

In 1971, **a Division of Health Services Research and Development** (now renamed Centre for Health Services and Policy Research) was established within the Centre, with funds from a National Health Grant, to serve as a resource for HSR. This division collaborated with all the faculties and schools in the Health Sciences Centre as well as health and human service agencies and government departments in research pertaining to new as well as existing models of health care. In 1973, i.e., 2 years later, "funding opportunities (for the Division) were under threat of disappearance." However, it was clear that the University and government had to join in a partnership of research and development. The Centre received a boost when the provincial Minister of Health, in 1973, responding to issues of concern regarding health manpower, funded the establishment of an interagency health manpower research unit to focus on health manpower research for the province of British Columbia, and this unit was amalgamated into the Division of Health Services Research and Development.

The research priorities of the current Centre are established through a process of discussion and negotiation involving the Centre, various health care provider groups, and ministry of health officials working through both formal and informal communication processes. The types of research undertaken include developing and maintaining a cooperative data base; in depth studies that have a particular policy relevance or assess the impact of a specific policy measure and surveys on specific topics of concern (e.g., difficult-to-fill positions in hospitals) that provide a reliable and quick pulse of the situation and timely information for decision-making (Kazanjian 1991).

Reviewing these developments, Kazanjian (1991) comments, "The creation and setting up of a university-based research unit that can also serve the policy and planning needs of provincial authorities and service providers requires a strong consensus on the utility of such an effort. The resources required for such an endeavour are not negligible and the organizational activities involved can be taxing for all their stakeholders. If tenure is considered a measure of success, then the British Columbia model has certainly proved to be successful."

3. A nongovernmental institute associated with a university

The Centre for Multidisciplinary Research in Development, CIMDER, provides a good example of a nongovernmental institute associated with a university.

A nongovernmental institute associated with a university

CIMDER is a nongovernmental organization associated with the University del Valle. CIMDER holds formal agreements with this university to ensure access to facilities and libraries and cooperation from university staff members for research and technical assistance.

In 1972, a group of local and national institutions decided to establish a multidisciplinary research program in rural development. Professionals from various faculties of the Universidad del Valle, the Instituto Colombiano Agropecuario (ICA), the Corporacion Autonoma Regional del Cauca (CVA), the Universidad del Cauca, and the Sectional Health Service of Cauca formed the core research staff for that program. IDRC, by financing the health research component, catalyzed the creation of the Centro de Investigaciones Multidisciplinarias en Desarrollo — CIMDER — which remained the bulwark of the research efforts in rural development. Several development agencies such as ICA and CVC, saw the importance of this interinstitutional effort in achieving comprehensive development. For instance, ICA, a national research and technical assistance institution, supported CIMDER's research efforts in relating agricultural production to nutrition and health. CVC, a regional corporation inspired by the Tennessee Valley Authority, supported CIMDER's integrated experiences for promoting development. The role of Universidad del Valle was particularly critical because this public university is a leader in research and education and a main reference point for development-undertaking initiatives.

Over more than 15 years, CIMDER has been involved in research and development related to health services. Financial and technical support has been received from the Rockefeller Foundation, the Ford Foundation, WHO/PAHO, UNICEF, the Foundation for Higher Education, the University del Valle, and especially IDRC.

CIMDER has designed and implemented an innovative program for developing primary health care (PHC). CIMDER's conceptual approach stressed the importance of improving people's ability to produce responses to a community's health problems. Special emphasis was given to the use of appropriate health technologies designed by CIMDER. These included a simplified system for gathering epidemiological information, elementary technologies for measuring nutritional status, a micro-health post for home treatments, and mechanisms for raising community awareness and action for dealing with local health problems. Social participation was promoted and participatory methodologies for training community health leaders were developed.

A mid-term evaluation showed the need for strengthening the institutional capacity for delivering primary health services. Early in the 1980s, with financial support from IDRC, CIMDER initiated operational research activities for improving the efficiency of local management including health posts, centres, and local hospitals as an additional contribution to strengthening the PHC strategy (Ligia Malagon de Salazar, Director, Centre for Multidisciplinary Research in Development (CIMDER), Cali, Colombia, personal communication).

4. An autonomous institute under a ministry

Another pathway through which a full-fledged HSR institution develops is illustrated by the Korean experience.

An autonomous institute under a ministry

The Korea Institute for Health and Social Affairs (KIHASA) is an autonomous policy-oriented research organization under the Ministry of Health and Social Affairs. The history of its evolution demonstrates several interesting features. The Korea Institute for Family Planning (KIFP 1971-1980) began as a family planning unit that conducted applied research and evaluation in family planning programs. The Korea Health Development Institute (KHDI 1976-1980) was devoted to research on health needs, health care delivery systems, and the evaluation of particular health service activities as requested by the government. In 1981, the KIFP and KHDI were merged to form the Korea Institute of Population and Health (KIPH) and subsequently, in 1986, the research unit function of the Social Security Committee under the ministry was also transferred to the KIPH. In 1990, the function of social welfare research was added to the KIPH's existing functions of population and health services research, and it was renamed the Korea Institute for Health and Social Affairs with a mandate to carrying out research in these fields to provide information and guidelines for the government to use in formulating policies on national issues. In addition, the institute conducts training and disseminates information on health and social affairs and is mandated "to carry out joint research and exchange information and technology with related institutes inside and outside of the country." Some of the distinctive features of the Institute are its Health Systems Research Community Field Laboratory and the population laboratory for populations of 100,000. These have served as an excellent mechanism for pilot-testing strategies, such as regional medical insurance and using multipurpose health workers, before they are implemented nationally.[13]

5. A network of collaborating institutions

Another approach to developing organizational models that can sustain and promote HSR activities is provided by the Federation for International Cooperation of Health Services and Systems Research Centers' (FICOSSER), inter-centre collaborative research program.

Example of a network of collaborating institutions

FICOSSER "aims at creating opportunities for interchange and mutual enrichment between research centres having common points of interest. Instead of carrying out their research in isolation, centres are invited to follow similar paths and exchange their experiences with a view to rendering their activity more efficient." In 1990, five projects were set up, each with its own group of participating research centres, most of which are universities in several countries. The outline for each project is approved by the FICOSSER General Conference and centres are invited to participate on a voluntary basis, implementing the selected research outline either partially or totally, depending on the national context, capacity, scientific interest, etc., of the participating centre.[14]

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[13] Korea Institute of Health and Social Affairs, WHO Collaborating Centre for Health Systems Reseach, SAN 42-14, Bulgwang-Dong, Eunpyung-Ku, Seoul 122-040, Korea.

[14] FICOSSER has published a second edition of *The International Directory of Health Services and Systems Research Centers* (April 1991). Further information on FICOSSER, its projects, publications, and newsletter can be obtained from the FICOSSER Secretariat, 168A, Rue de Grenelle, 75007 Paris, France (Fax: (33) (1) 45 55 87 94).

Each of the organizational models described have particular characteristics of interest. It is well known that there are also several examples of unsuccessful efforts at setting up multidisciplinary research structures in universities. At present, there is insufficient information to analyze the characteristics of the successful versus the less successful models.

The International Health Policy Program sponsored a working group to review policy research institutions in several African and Asian countries to identify characteristics that would be desirable in developing health policy training and research centres. Many of the characteristics discussed by the working group have relevance to universities and research institutes that are seeking to institutionalize HSR.

Other mechanisms to sustain HSR

In addition to the creation of suitable organizational structures, several other mechanisms are useful in sustaining HSR type research activities in universities.

1. **Coordinating mechanisms**

Committees, councils, or working groups that **coordinate research** in different disciplines or departments are mechanisms that have been useful in several settings. (See for example, the working group at the University of British Columbia, described earlier.) It is pertinent to note, however, that the formation of a coordinating committee or council will not, in itself, ensure that multidisciplinary research will be promoted. For example, ESAURP notes that "research coordination by research councils existing among the ESAURP region countries has not been entirely successful. Special research institutes among some large universities have a tendency to specialize and adhere to the rituals of research, thus providing less avenue for research coordination among themselves or with government research departments" (ESAURP 1987).

2. **Identification of research priorities**

Several countries or groups of countries have identified priority lists of problems for research. For example, the countries in the WHO European region have published their priority list for research (WHO Regional Office for Europe 1988). ESAURP (1987) "highly recommends the present trend where a number of (university) departments or bureaux have come up with priority lists, sometimes in consultation with governments and enterprises."

In Malaysia, the National Council for Science Research and Development (Malaysia n.d.) coordinated an exercise involving universities, research institutes, and the Ministry of Health in which priority areas for research were identified and are now circulated to all research agencies and used by the national research funding committee as a guideline.

3. **Reorientation of funding for research projects**

One of the steps needed to implement these priority lists is to ensure that research funding takes cognizance of the national priorities. One constraint, despite their necessary role, may be the structure of existing research councils. For example, medical research councils have tended to fund biomedical research. Members of peer-review committees are usually drawn from more traditional researchers who are not familiar with HSR. This produces a bias against HSR proposals in the review process and, in fact, HSR proposals may not even be accepted for review. Similarly, health-related

projects are not always accepted for review by social science funding councils, if such exist, despite the inclusion of social science methods in HSR.

As HSR gains credibility and visibility, task forces may be needed to consider a revised or broadened mandate for medical research councils or the formulation of new funding bodies, as it is not always easy to reorient medical research councils. Funding agencies, be they national or international, and more particularly councils or committees in universities that review research proposals must develop mechanisms to implement their new mandate. These mechanisms may include:

- Commissioning research projects on selected priority topics.
- Reserving a certain proportion of the available funds for HSR-type research.
- Applying appropriate criteria in evaluating HSR projects. For example, WHO, South East Asia Regional Office (personal communication, 1991) has identified criteria on three parameters that should be used for the appraisal of HSR project proposals:
  - Scientific attributes of the project;
  - Utility attributes (i.e., the potential for utilization of results); and
  - Contextual attributes (i.e., the larger context in which the project will be implemented) because they will affect the feasibility of implementing the project and also its contribution to the development of HSR.

4. Funding by donor agencies

The mechanism of **funding by donor agencies** is another important strategy. University budgets do not usually support more than a small amount of the research infrastructure within the university. Traditionally, university researchers, based in particular departments or faculties, submit grant proposals to research funding (donor) agencies, either national or international. If they are successful, the grants support the major portion of the necessary equipment, personnel, office space, and field costs. Recently, several donor agencies have recognized the importance of providing a certain level of core support, perhaps related to an area or areas of research, that is longer term and less specific in nature than support for a specific research project. Core support may be of great assistance in encouraging and maintaining an institutional base for research. In some cases such funding has replaced the university support that the institution is no longer able to provide; in others, core funding to support research initiatives has never been part of the establishment's budget.

In recent years, at least two models are beginning to emerge. In the first, new or re-emerging institutions seek to upgrade the research skills of faculty; to improve the physical plant (library and especially information processing resources); and to undertake a program of research that will not necessarily be entirely funded within the capacity-building grant as the usual funding mechanisms continue to be used. The components of a grant for capacity-building-in-research are usually fellowships, equipment, personnel support, and, in many instances, a sum specifically designated to initiate a small-grants program. This fund promotes the establishment of peer-review mechanisms, accounting procedures, and short-term studies which form a sound basis for an increasingly complex program of research as the centre matures. Donor support is usually phased out over a period of 5 to 10 years, decreasing as self-sufficiency increases. This model of donor funding can be illustrated, for example, by projects supported by IDRC in Uganda (Health Sciences Education Rehabilitation, Uganda-Makerere University. IDRC, 1989, personal communication), Colombia (Institutional Strengthening for Research Development and Technology Transfer, Phase III, CIMDER, Colombia. IDRC 1990, personal communication), and Benin (Projet de développement sanitaire de Pahou,

Édification de la capacité de recherche des établissements, Université nationale du Benin. IDRC 1988, personal communication).

In another model, a group of country-based, research-oriented institutions may submit a combined proposal designed to enhance the country's ability to conduct essential, high-priority research. An example is the IDRC- and SAREC-funded project in Mozambique (Strengthening Capability for Essential Health Research, ISRI, Mozambique. IDRC/SAREC 1990, personal communication) where the consortium includes a national institute of health, a university-based faculty of medicine, and a regional training centre, the latter specifically charged with the program of short-term research training.

Such endeavours are more difficult administratively although the potential for enhancing the coordination, relevance, and productivity of research efforts is exciting. In addition to the components noted for the more traditional university-based model, the inclusion of management training as part of the fellowships and awards program, desirable in both circumstances, becomes essential in the latter. Depending on structure, the HSR focal point, usually ministry-based, can be very useful in promoting the coordination required, as well as in disseminating findings to appropriate recipients. Much, of course, depends on the existing country-based linkages already in place, but it is likely and recommended that capacity-building grants go to situations in which the germ of the idea, if not the components of the structure, already exist.

5. **Library and information facilities**

Another extremely important mechanism for sustaining HSR-type research is to provide researchers with access to **up-to-date literature and information**. Many libraries in universities and research institutes do not have an adequate range of publications related to HSR and the various HSR-related fields. The Pan American Health Organization (PAHO) has pioneered an effort to compile a listing of several important publications in HSR (PAHO 1991). Annex 3.1 in chapter 3 provides a short list of important journals in the field of HSR. In addition to these sources of published documents, each of WHO's regional offices has a number of extremely useful, unpublished papers and documents pertaining to various aspects of HSR and its development, as well as reports of HSR studies, many of which appear in the form of reports to governments rather then as publications in scientific journals. IDRC's library provides services to researchers working on international development in universities and other organizations. Through its Development Databases Service, it provides the development research community with on-line access to IDRC's databases, including IDRIS, as well as those it receives from international organizations. The IDRC library, for example, will do MEDLINE searches for researchers who do not have direct access. Training is offered to personnel of international organizations who are establishing information guidelines and standards.

Because the nature of HSR is such that many of these studies will never be submitted for publication, libraries in universities need to develop a mechanism to obtain copies of such reports directly from the offices of WHO and other funding agencies.

Sustaining the University Partnership with Health-Care Organizations and the Community

The research output of a university comes from:

- Studies done by undergraduate and postgraduate students as part of the requirements of their programs of studies; and

- Research done by staff members.

The ability of the university to provide an HSR orientation to the work of undergraduate and postgraduate students is dependant not only on the curriculum and training activities, but also on the existence of established mechanisms of communication between the university, the community, and health managers and health personnel. Such mechanisms are also essential if experienced researchers in the university are to provide guidance to health-service personnel who are embarked on simpler projects and involve the community and health managers in their own HSR-type projects.

Links with health managers and health personnel

At the policy level: A variety of mechanisms have been used in various settings to link researchers with health managers. The International Health Policy Program sponsored a wide-ranging review of institutions involved in health-policy training and research. An excerpt (IHPP 1990) from a summary of the experience of five social science and policy research institutes in India and their relationship to policymakers is illustrative of what it found. Two of the five institutions have moved in the direction of creating a climate of opinion among the public rather than focusing on the government as the sole actor in the policy arena. They consider social policy a much broader concept than government decision-making and consider it important to retain the right to challenge the governmental line where appropriate. The other three institutions have much stronger links with government and focus their research on problems of immediate concern to the government. "The state and central governments use the institutions in a variety of ways, such as for:

- Background studies on various issues related to policies, programs, and projects;
- The use of faculty members on committees, commissions, and tasks forces;
- The use of individual faculty members as advisors and consultants to planning commissions at the state and central levels, as well as to various ministries and departments;
- Informal discussion with faculty members both by political leaders and by administrators;
- Participation of political leaders and administrators in seminars organized by the institutions; and
- Cooperation with government agencies, for example, serving on the planning commission at the centre and assuming the chairmanship of state committees and boards."

Although all of these mechanisms have their uses, it is apparent that they have major limitations because of their ad hoc nature. Thus the IHPP (1990) review comments that "while the institutions have some sense of usefulness, the more common feeling is one of lack of systematic and continuous impact." Several strategies have been identified that can strengthen the links between universities or research institutes and policymakers, and IHPP is actively seeking examples of additional strategies that have proven to be effective in different settings.

At program management and health-care delivery levels: The partnership between universities and research institutes and health services at the program management and delivery levels have two aims:

- To increase the relevance and utility of research conducted by university researchers; and
- To provide guidance and advice to health-service personnel who are engaged in less-complex HSR projects.

Mechanisms to support such partnerships are being developed in several countries. For example, in Botswana academicians who are experienced researchers and serve on the Health Research and Development Committee of the Ministry of Health, serve as advisors to district health teams that embark on local-level research projects. In the Philippines, the College of Public Health, University of Philippines, is in the process of setting up a collaborative project of HSR and development with health managers and the community in the province of Cavite, as has been described in chapter 4. The staff of the college will provide leadership for a process involving a series of consensus-building seminars and meetings with community leaders and local health managers to identify health problems that require research. Then health managers and university students will be trained to develop and implement research projects on these priority problems with participation from the community. The challenge for this endeavour will be to develop strategies for continuing the process, as individual health managers, university staff, and students come and go.

At the community level: The importance of the partnership between universities and the community is being given increasing prominence. The example of the student–community partnership of the Suez Canal University in Ismailia and the El-Tal El Kebir district was described in chapter 4. The Network of Community Oriented Educational Institutions for Health Sciences is sponsoring a project on University Partnerships in Essential Health Research to enhance the capacity of university staff and students to collaborate with health organizations and communities in research on priority issues in health. However, these efforts are in early formative stages and the time is not yet ripe for determining the types of mechanisms that will be needed to sustain such partnerships.

Conclusion

The introduction and development of HSR in any institution is obviously a complex endeavour and there is no single blueprint for success. It is evident that "prime movers" in this effort will need to be innovative and imaginative. They will have to seize opportunities as they arise and use the resources that are available. The three phases of development as they are described in this training series are intended as a conceptual framework to provide direction for development efforts. Experiences in each institution will vary and strategies will be modified and elaborated in different ways. The Institute for Medical Research in Kuala Lumpur provides one interesting example of a process of gradual transition in adopting HSR.

HSR in a biomedical research institute[15]

In 1988, I assumed office as the Director of the Institute for Medical Research (IMR) which is an institute within the Ministry of Health, Malaysia, specializing in research in tropical diseases and also serving as a national reference laboratory for a number of laboratory disciplines. During the 80s, there were many initiatives within the Ministry to encourage the development of HSR. In 1987, all the heads of divisions within the IMR and several senior researchers were sent to a National Workshop on Research Management which sensitized them to the concept of using research as a problem-solving tool and highlighted the importance of utilization of research results. I myself had the opportunity of attending a WHO workshop on Research Management. It dealt, among other things, with HSR and how to interest and motivate researchers to interact with health-care managers during the research process and how to introduce HSR into a research institute.

[15] Based on an interview with Dr M. Jegathesan, Director, Institute for Medical Research, Kuala Lumpur, Malaysia.

HSR in a biomedical research institute (continued)

A situational analysis of our research efforts showed that the majority of the research was biomedical in nature and the general perception was that HSR was relevant only to "community or field research." This analysis led to a series of initiatives to reorient our research.

The national funding mechanism for research was in the process of being reoriented and we had received a national priority list of problem areas for research as well as revised criteria for research funding. This provided a tool that could be used to initiate change. The document was discussed at meetings of department heads, and special briefings were organized for all researchers. These briefings were ideal opportunities to introduce concepts of HSR. There were several other forums that could be used for a similar purpose (e.g., the conference of clinical specialists, meeting of the Parasitology Society, etc.)

Within the IMR, we gradually revamped the Research Review Committee to include representatives from the Ministry as well as from clinical and public-health specialties. Collaborative projects that had an HSR orientation rather than a pure biomedical focus were given priority (e.g., an evaluation of the "cold chain" was a priority interdepartmental project that involved the departments of Virology and Rural Health and the Ministry of Health).

Staff are encouraged to develop an interest in HSR. This is done in many ways. They are encouraged to attend HSR activities, for example, by serving as trainers or facilitators in training activities organized by the Public Health Institute. This serves to increase the pool of HSR "converts." In some instances the process of evolution of a research project has drawn biomedical researchers toward HSR. For example, a project that evaluated the efficacy of insecticide impregnated mosquito nets found that, although insecticide impregnation was effective in the laboratory, it was less so in the field. Thus the researchers developed an interest in why this was so and why efficacy varied in different groups of the population.

Now gradually there is a growing recognition that HSR has relevance even to laboratory services and laboratory research. For example, questions such as "Has the appropriate test been requested? Has the sample been taken correctly? Has it been sent in a timely manner to the lab? Are the results reliable?" have been the topics of studies that have led to improvement of the courier system and to the system of sending test results to the wards. Laboratory managers are beginning to realize that Laboratory Medicine includes the management of the system and that research should focus not only on technical biomedical issues but also on efforts to improve the system of laboratory support for patient care.

HSR is in its infancy in university settings and experience in "consolidation" is limited. The challenge for the coming decade will be to develop innovative and durable mechanisms to sustain HSR in the face of competing priorities and to build on gains already made. Recognition of and commitment to the underlying principles and philosophies of HSR will facilitate this task and help resolve the many territorial and semantic disputes that are likely to impede progress.

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